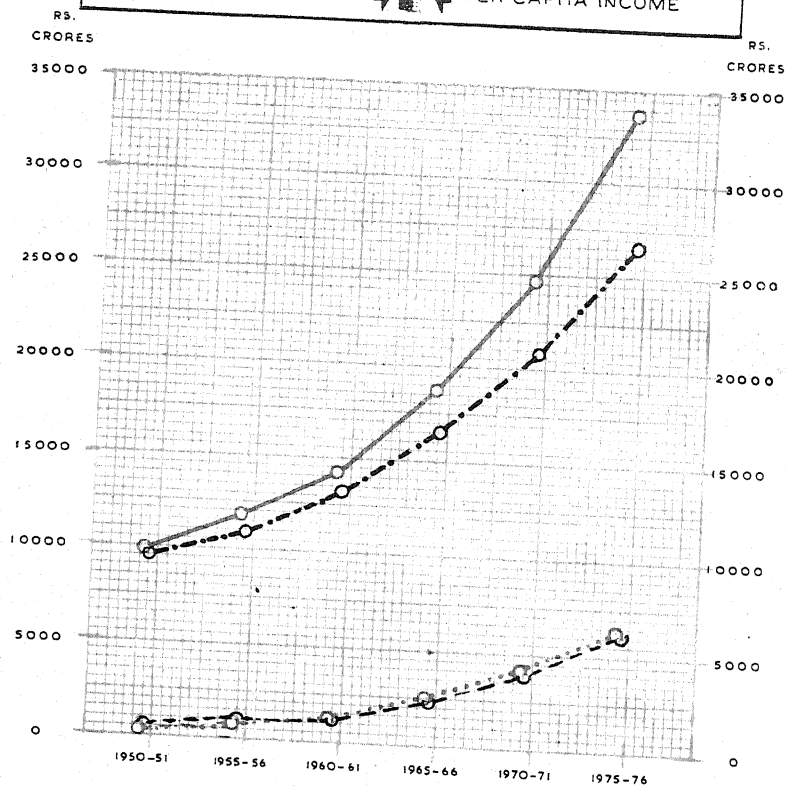
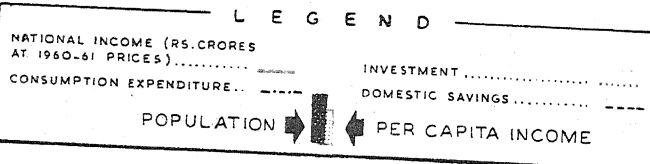


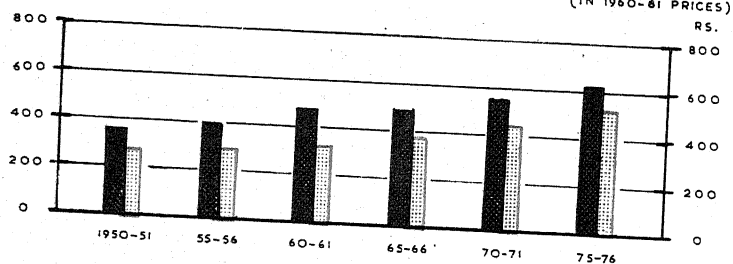
THIRD  
FIVE YEAR  
PLAN

# NATIONAL INCOME, INVESTMENT, SAVINGS AND CONSUMPTION EXPENDITURE 1950-51 TO 1975-76



POPULATION (MILLIONS)

PER CAPITA INCOME (IN 1960-61 PRICES)  
RS.





PC 87  
100000

# THIRD FIVE YEAR PLAN



समामेव जयते

GOVERNMENT OF INDIA: PLANNING COMMISSION

*Explanatory Note*

The expressions 'lakh' and 'crore' signify 100,000 and 10,000,000 respectively.

## THIRD FIVE YEAR PLAN

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## INTRODUCTION

THIS REPORT sets out the objectives, policies and programmes of development for the Third Five Year Plan.

Two Five Year Plans have helped strengthen the foundations of economic and social life and stimulated industrial and economic growth and scientific and technological advance.

The Third Five Year Plan seeks to give a more precise content to the social objectives of the Constitution and represents a large advance towards their realisation. It takes account of the successes and the failures in the first two Plans and sets the tasks to be fulfilled in the perspective of development over the next fifteen years and more.

Work on the preparation of the Third Plan commenced towards the end of 1958 and was carried out in three main stages. The first, leading to the publication of the Draft Outline early in July, 1960, comprised detailed studies by working groups set up at the Centre and in the States. Parliament gave its general approval to the Draft Outline in August, 1960.

The Draft Outline was discussed throughout the country and served as the basis for the preparation of the plans of States. These were considered with the Chief Ministers of States between September and November, 1960. In January, 1961, the National Development Council made its recommendations concerning the overall size and the structure of the Third Plan; the Council also set up a Committee on Savings to suggest ways of securing the maximum mobilisation of resources for the Third Plan. Finally, on May 31 and June 1, 1961, the National Development Council considered the Draft Report on the Third Plan and generally approved it.

The objectives and priorities of the Third Plan were considered carefully by five Parliamentary Committees in November, 1960, and every effort has been made in this Report to avail of the suggestions and comments offered by these Committees. Several aspects of the Plan were placed from time to time before the Committee of Members of Parliament from different political parties presided over by the Prime Minister. The Consultative Committee of Members of Parliament associated with the Planning Commission also reviewed the Plan at various stages.

Throughout the preparation of the Plan, leading public men and scholars, professional associations, organisations representing industry and labour, and independent experts generously gave of their time and experience. The Planning Commission had the benefit of advice and

suggestions from its Panel of Economists, Panel of Scientists, and Panels on Land Reform, Agriculture, Education, Health and Housing. It was also helped by studies initiated by the Programme Evaluation Organisation, the Research Programmes Committee, the Committee on Plan Projects, the Central Statistical Organisation, the Indian Statistical Institute and other leading organisations engaged in research. Efforts to prepare plans at the district, block and village level, specially for the development of agriculture, cooperation, education and rural industries, were an integral part of the process of drawing up the plans of States as well as the National Plan. These local plans are a vital element in the success of Panchayati Raj, which places in the hands of the people of each area the initiative and responsibility for their own development and the means and resources for rapid advance.

The preparation of the Third Plan has been, thus, a vast national undertaking in which valuable contributions have come from many sources, and at every stage there has been the closest collaboration with the State Governments and the Central Ministries.

The Third Plan represents the first phase in a scheme of long-term development extending over the next fifteen years or so, the preparation of which will now be taken in hand. In the course of this period, India's economy must not only expand rapidly but must, at the same time, become self-reliant and self-generating. This long-term approach is intended to provide a general design of development for the country's natural resources, agricultural and industrial advance, changes in the social structure and an integrated scheme of regional and national development.

The Plan sets large objectives and targets for the five-year period. They are large only in comparison with the past, not in relation to needs or to the nation's capacity to achieve. They constitute a minimum which must be assured, but their true purpose is to open the way to a still more intensive endeavour and a deeper sense of urgency.

The size of the task and the many-sided challenge should not be under-estimated. The greatest stress in the Plan has to be on implementation, on speed and thoroughness in seeking practical results, and on creating conditions for the maximum production and employment and the development of human resources. Discipline and national unity are the very basis of social and economic progress and the achievement of socialism. At each step, the Third Plan will demand dedicated leadership at all levels, the highest standards of devotion and efficiency from the public services, widespread understanding and participation by the people, and willingness on their part to take their full share of responsibility and to bear larger burdens for the future.

## CHAPTER I

### OBJECTIVES OF PLANNED DEVELOPMENT

#### I

#### INTRODUCTION

THE basic objective of India's development must necessarily be to provide the masses of the Indian people the opportunity to lead a good life. That indeed is the objective of all countries for their peoples, even though the good life may be defined in many ways. In the larger context of the world, the realisation of this objective for India, as for other countries, is intimately tied up with, and dependent on the maintenance of world peace. War, with the weapons of modern warfare, would not only be an end to all hopes of progress but would endanger the survival of the human race. Peace, therefore, becomes of paramount importance and an essential pre-requisite for national progress. The existence of underdeveloped and poverty-stricken nations or peoples is itself an abiding danger to the maintenance of peace. It has, thus, been increasingly recognised that the welfare and peace of the world require the extermination of poverty and disease and ignorance from every country, so as to build up a liberated humanity.

2. Each major culture and civilisation has certain distinctive features, rooted in the past, which bear the impress of that culture. India, with thousands of years of history, bears even now the powerful impress of her own distinctive features. They are today covered up by widespread and appalling poverty, the result of a traditional society and a static economy in the past, petrified to some extent by colonial rule. But these essential features, though apparently associated with the traditional structure of society are in no sense an integral part of it. They are in fact a set of moral and ethical values which have governed Indian life for ages past, even though people may not have lived upto them. These values are a part of India's thinking, even as, more and more, that thinking is directed to the impact of the scientific and technological civilisation of the modern world. To some extent, the problem of India is how to bring about a synthesis between these two. Probably, no other country in the modern world would have produced a Gandhi; even Tagore, who was typically modern in his approach to life's problems, was, at the same time, steeped in India's old culture and thinking. His message is thus one of synthesis between these two.

3. To provide the good life to the four hundred million people of India and more is a vast undertaking, and the achievement of this goal is far off. But no lesser goal can be kept in view, because each present step has

to be conditioned by the final objective. Behind the plans that are drawn up is the vision of the future, even as the Indian people had a vision of freedom and independence during the long years of their national struggle, and there is faith and confidence in that future. Fully conscious of existing difficulties the people have also the conviction that these difficulties will be overcome. The experience of the last ten years of planning and the large social and economic changes that have already taken place have brought a conviction that India can look forward with assurance to sustained economic progress. Even in this ancient land, for so long governed by tradition, the winds of change are blowing and affecting not only the dweller in the city but also the peasant in his field. At each stage, new conflicts and new challenges arise. They have to be met with courage and confidence. There is an excitement in this changing face of India as the drama of India's development plans unfolds itself.

4. The more immediate problem is to combat the curse of poverty, with all the ills that it produces, and it is recognised that this can only be done by social and economic advance, so as to build up a technologically mature society and a social order which offers equal opportunities to all citizens. This involves basic social and economic changes and the replacing of the old traditional order by a dynamic society. It involves not only the acceptance of the temper and application of science and modern technology, but also far-reaching changes in social customs and institutions. To some extent, recognition of this twofold aspect of change has been present in the Indian mind for generations past. Gradually it has taken more concrete shape and has become the basis for planning.

5. It was inevitable that during India's struggle for freedom, the political aspect of Independence overshadowed everything else. Yet, from its earliest beginnings, Indian nationalism had a large element of economic thinking and social reform. This was, to some extent, an unusual feature for a national movement. Freedom was considered the indispensable means to overcome mass poverty, to protect the farmer and the artisan, to create modern industry, to remove privilege and injustice and to reconstruct the entire fabric of India's social and economic life. Beginning with Dadabhai Naoroji, whose paper on 'The Poverty of India' was presented as far back as 1876, a long line of national leaders placed these aims in the forefront of the national struggle. As the national movement grew and spread among the people of India, its social content became deeper. With the coming of Mahatma Gandhi, the movement spread with remarkable rapidity to the peasantry and the workers of India. To Gandhiji freedom was not merely a political objective, but the raising of the masses of the people from their poverty and degradation. He aligned himself with the

masses of the Indian people and more especially with those who were in the lowest rungs of the social ladder. Under his leadership the national movement came to identify itself more and more with the service of the masses and, progressively, a very large proportion of its membership came from amongst the peasants. The agrarian problem thus came to occupy a prominent place in its thinking even as, under Gandhiji's guidance, it made the uplift of the depressed and the underprivileged one of its major planks.

6. In this way, as the political struggle for Independence developed and took shape in mighty movements, it was allied in some measure to India's basic social and economic problems, and more particularly the agrarian problem. The social and economic aims of the struggle for freedom became progressively more definite. A comprehensive economic programme was adopted in 1931, and an agrarian programme in 1936. Towards the end of 1938, a National Planning Committee was constituted and, thus, the idea of planning came into prominence in India. The National Planning Committee could not carry on its work effectively because of the beginning of the Second World War, in the course of which many of its members found themselves in prison. But it considered nearly all aspects of planning and ultimately produced a series of studies containing social and economic policies and programmes, which formed the basis of a more organised attempt at planning after Independence.

7. The Second World War resulted, by the compulsion of events, in the growth of some industries in India. Even before Independence was established, the Interim Government gave thought to planning and constituted an Advisory Planning Board to collect all the available material for it. Owing to the disastrous consequences of Partition and the vast numbers of people who were uprooted and driven out from Pakistan to India and India to Pakistan, there was some delay in giving effect to the recommendations of the Board. Early in 1950, following the adoption of the new Constitution by the Constituent Assembly of India, the Government of India established the Planning Commission to assess the country's material, capital and human resources and to formulate a Plan for their most effective and balanced utilisation.

8. In the Constitution the basic objectives were set forth as 'The Directive Principles of State Policy'. Among those 'Directive Principles' were that

"The State shall strive to promote the welfare of the people by securing and protecting, as effectively as it may, a social order in which justice, social, economic and political, shall inform all the institutions of national life".



Further that—

“The State shall, in particular, direct its policy towards securing

(a) that the citizens, men and women equally, have the right to an adequate means of livelihood;

(b) that the ownership and control of the material resources of the community are so distributed as best to subserve the common good;

(c) that the operation of the economic system does not result in the concentration of wealth and means of production to the common detriment.”

These general principles were given a more precise direction in December, 1954, when Parliament adopted the ‘socialist pattern of society’ as the objective of social and economic policy. This concept, which embodies the values of socialism and democracy and the approach of planned development, involved no sudden change, and had its roots deep in India’s struggle for freedom.

9. Thus, ever since Independence, two main aims have guided India’s planned development—to build up by democratic means a rapidly expanding and technologically progressive economy and a social order based on justice and offering equal opportunity to every citizen. To change a traditional society into a dynamic one, in a country with a vast population rooted in the past, was a tremendous task. To do this through peaceful and democratic means and by the consent of the people, made this task even more difficult. It was inevitable that India should accept peaceful and democratic means as these had been the very methods it had adopted in its struggle for freedom.

10. With these objectives in view, the First Five Year Plan faced this task with limited means and inadequate data. The immediate objectives it laid down were achieved and this success gave confidence to the nation. The Second Five Year Plan, being based on somewhat greater experience and more knowledge, set forth larger goals and a long-term strategy for economic and industrial advance based on the socialist pattern of society. In describing the approach to planned development, the Second Five Year Plan stated:

“....The task before an underdeveloped country is not merely to get better results within the existing framework of economic and social institutions, but to mould and refashion these so that they contribute effectively to the realisation of wider and deeper social values.

“These values or basic objectives have recently been summed up in the phrase ‘socialist pattern of society’. Essentially, this

means that the basic criterion for determining lines of advance must not be private profit, but social gain, and that the pattern of development and the structure of socio-economic relations should be so planned that they result not only in appreciable increases in national income and employment but also in greater equality in incomes and wealth. Major decisions regarding production, distribution, consumption and investment—and in fact all significant socio-economic relationships—must be made by agencies informed by social purpose. The benefits of economic development must accrue more and more to the relatively less privileged classes of society, and there should be progressive reduction of the concentration of incomes, wealth and economic power. The problem is to create a milieu in which the small man who has so far had little opportunity of perceiving and participating in the immense possibilities of growth through organised effort is enabled to put in his best in the interests of a higher standard of life for himself and increased prosperity for the country. In the process, he rises in economic and social status. Vertical mobility of labour is thus no less important than horizontal mobility, for nothing is more destructive of hope and more inhibitive of effort than a feeling that the accident of birth or of a poor start in life is likely to come in the way of a capable person rising in life in terms of economic and social status...

"The socialist pattern of society is not to be regarded as some fixed or rigid pattern. It is not rooted in any doctrine or dogma. Each country has to develop according to its own genius and traditions. Economic and social policy has to be shaped from time to time in the light of historical circumstances. It is neither necessary nor desirable that the economy should become a monolithic type of organisation offering little play for experimentation either as to forms or as to modes of functioning. Nor should expansion of the public sector mean centralisation of decision-making and of exercise of authority. In fact, the aim should be to secure an appropriate devolution of functions and to ensure to public enterprises the fullest freedom to operate within a framework of broad directives or rules of the game.....

"....The accent of the socialist pattern of society is on the attainment of positive goals, the raising of living standards, the enlargement of opportunities for all, the promotion of enterprise among the disadvantaged classes and the creation of a

sense of partnership among all sections of the community. These positive goals provide the criteria for basic decisions.

The directive principles of State policy in the Constitution have indicated the approach in broad terms; the socialist pattern of society is a more concretised expression of this approach. Economic policy and institutional changes have to be planned in a manner that would secure economic advance along democratic and egalitarian lines. Democracy, it has been said, is a way of life rather than a particular set of institutional arrangements. The same could well be said of the socialist pattern."

## II

### PLANNED DEVELOPMENT

11. When Independence came, India had a slender industrial base. Millions of her rural people suffered under the weight of a traditional agrarian structure. A long period of economic stagnation, against the background of increasing pressure of population, followed by the burdens of the Second World War, had weakened the Indian economy. There was widespread poverty and want. The partition of the country had uprooted millions of people and dislocated economic life. Productivity in agriculture and industry stood at a low level. In relation to needs the available domestic savings were altogether meagre. The promise of freedom could only be redeemed if the economic foundations were greatly strengthened. The Constitution established equal rights of citizenship, and these had now to be expressed through rising levels of living and greater opportunities for the bulk of the people. It was essential to rebuild the rural economy, to lay the foundation of industrial and scientific progress, and to expand education and other social services. These called for planning on a national scale, encompassing all aspects of economic and social life, for efforts to mobilise resources, to determine priorities and goals and to create a widespread outlook of change and technological progress. Thus, planned development was the means for securing with the utmost speed possible, a high rate of growth, reconstructing the institutions of economic and social life and harnessing the energies of the people to the tasks of national development.

12. The leading features of the pattern of development envisaged in the Five Year Plans may be briefly stated. The basic objective is to provide sound foundations for sustained economic growth, for increasing opportunities for gainful employment and improving living standards and working conditions for the masses. In the scheme of development, the first priority necessarily belongs to agriculture; and agricultural pro-

duction has to be increased to the highest levels feasible. The Five Year Plans provide for a comprehensive and many-sided effort to transform the peasant's outlook and environment. The growth of agriculture and the development of human resources alike hinge upon the advance made by industry. Not only does industry provide the new tools, but it begins to change the mental outlook of the peasant. There can be no doubt that vast numbers of the peasantry today in India are undergoing this change of outlook as they use new tools and experiment with new methods of agriculture. Even the coming of the bicycle in large numbers to the villages of India is not only a sign of higher standards, but is a symbol of new and changing attitudes. Agriculture and industry must be regarded as integral parts of the same process of development. Through planned development, therefore, the growth of industry has to be speeded and economic progress accelerated. In particular, heavy industries and machine-making industries have to be developed, the public sector expanded and a large and growing cooperative sector built up. The public sector is expected to provide specially for the further development of industries of basic and strategic importance or in the nature of public utility services, other industries being also taken up by Government to the extent necessary. State trading has also to be undertaken on an increasing scale according to the needs of the economy. In brief, in the scheme of development, while making full use of all available agencies, the public sector is expected to grow both absolutely and in comparison and at a faster rate than the private sector.

13. With the rapid expansion of the economy, wider opportunities of growth arise for both the public and the private sectors and in many ways their activities are complementary. The private sector includes not only organised industry but agriculture, small industry, trade and a great deal of activity in housing and construction and other fields. Progressively, it has to take the form of cooperative effort. Among the main objects of programmes undertaken by the Government are the expansion of facilities for the development of agriculture, specially irrigation, the building up of economic overheads such as rail and road transport, ports and power stations, and the expansion of education, health and other social services. Activities which are promoted through these facilities are in considerable part in the hands of private individuals and organisations, and increasing numbers among them are being assisted. Thus, the Five Year Plans enlarge the scope for individual initiative as well as for co-operative and corporate effort. It is mainly within a limited area in the field of large-scale industrial enterprise that the question arises whether, in the special circumstances of the country, in accordance with the Industrial Policy Resolution of April, 1956, and in view of the social goals aimed at, particular tasks should be assigned to the public sector or to the private sector. In the context of the country's planned development the private sector has a large area in which to develop and expand. It has to

function, of course, within the framework of national planning and in harmony with its overall aims, and there must be continuous stress on undertakings in the private sector acting with an understanding of obligations towards the community as a whole. At the same time, it is essential to ensure that the opportunities available in the private sector do not lead to the concentration of economic power in the hands of small numbers of individuals and businesses and that disparities in income and wealth are progressively reduced.

14. In the pattern of development envisaged in the Five Year Plans, cooperation is expected to become progressively the principal basis of organisation in several branches of economic life, notably, in agriculture, small industry, distribution, construction and provision of essential amenities for local communities. Village and small scale industries have a crucial role in the development of the national economy, for, besides providing consumer and other goods and large-scale employment, they offer a method of ensuring a more equitable distribution of the national income and the means for the utilisation of available resources in skill and manpower. Disparities in levels of development in different regions have to be steadily reduced and the benefits of industrialisation spread evenly between different parts of the country. These aims have to be achieved, as the Industrial Policy Resolution specified, through the balanced and coordinated development of the industrial and agricultural economy of each region, and through planned urbanisation and the development of economic and social services. Frequently, in the early phases of development, there is a dilemma to be faced: whether it is better to concentrate on developing more favourably situated areas and thus securing quicker and larger returns from the investment, or to aim at more even development of the country, through greater attention to the more backward areas. Economic considerations have necessarily to be given importance, but certain social and regional aspects cannot be ignored. Indeed, as the economy develops, it becomes possible to provide for more intensive development in the less developed areas.

15. The policies described above constitute the larger part of the programme for achieving rapid economic development and for realising the socialist pattern of society. In such a scheme the basic criterion in determining social policies and the lines of economic advance must necessarily be the interest of the community as a whole, and especially of its weaker sections. Through its very success and dynamism, a rapidly developing economy throws up new problems of organisation and management as well as of social policy. The existing social and economic institutions have, therefore, to be appraised from time to time in relation to their role in the nation's development. To the extent they do not adequately fulfil the social purpose or fail to secure the economic aims of planned development, they have to be replaced or transformed.

16. Development plans reflect the changes which are taking place in the country's economic and social structure as well as the directions in which this structure has to be reorganised and strengthened. In a democracy the pace of change depends to a large extent on increase in public understanding and in public response and on the growth of a scientific outlook on the part of large numbers of people. Besides the economic and social objectives, the educational aspects of planning are, therefore, of great importance. These are emphasised through the wide sharing of responsibility for drawing up and carrying out Plans and through the participation in the process of planning by organisations representing all sections of opinion as well as universities and educational institutions and voluntary social service agencies. On behalf of the community as a whole the State has a large responsibility for assessing the wider long-term needs of the nation as against the claims of individual, sectional or regional interests, and in setting the goals to be achieved.

### III

#### PROGRESS TOWARDS SOCIALISM

17. It is a basic premise in India's Five Year Plans that, through democracy and widespread public participation, development along socialist lines will secure rapid economic growth and expansion of employment, reduction of disparities in income and wealth, prevention of concentration of economic power, and creation of the values and attitudes of a free and equal society. These are vital objectives. Where the bulk of the people live so close to the margin of poverty, the claims of social justice, of the right to work, of equal opportunity and of a minimum level of living have great urgency. Economic activity must, therefore, be so organised that the tests of production and growth and those of equitable distribution are equally met. A high rate of economic growth sustained over a long period is the essential condition for achieving a rising level of living for all citizens, and especially for those in low income groups or lacking the opportunity to work. Increase in population and the need for investment in basic productive capacities and in economic and social overheads, which yield their benefits after a considerable period, place large burdens on a developing economy. On the one hand, they limit the extent to which, over the short period, living standards can be raised; on the other, to be borne at all, their burdens must be shared widely, calling for sacrifice, according to capacity, by every section of the community.

18. Progress towards socialism lies along a number of directions, each enhancing the value of the others. Above all, a socialist economy must be efficient, progressive in its approach to science and technology, and capable of growing steadily to a level at which the well-being of the

mass of the population can be secured. In an underdeveloped country, a high rate of economic progress and the development of a large public sector and a cooperative sector are among the principal means for affecting the transition towards socialism. In the second place, a socialist economy should ensure equality of opportunity to every citizen. As a first step, it should provide for the basic necessities, in particular, for food, work, opportunity for education, reasonable conditions of health and sanitation, improvement in conditions of housing and a minimum level of income which, in the given circumstances, will ensure tolerable living standards. In the third place, through the public policies it pursues, a socialist economy must not only reduce economic and social disparities which already exist, but must also ensure that rapid expansion of the economy is achieved without concentration of economic power and growth of monopoly. Finally, a society developing on the basis of democracy and socialism is bound to place the greatest stress on social values and incentives and on developing a sense of common interest and obligations among all sections of the community. On account of the rigidities of the caste system as well as economic differences, India's social structure already presented numerous inherent conflicts and barriers to economic advance. While some of the old distinctions are passing—a process which is being speeded up—urbanisation and the growth of modern industry tend to introduce new disparities in levels of income and opportunity. In turn, these are reflected in modes of living, social behaviour and a general increase in the spirit of acquisitiveness. It is the aim of public policy to check undesirable tendencies and to ensure that these do not come in the way of building up a society which is fundamentally integrated from within and derives its strength from common values and a sense of shared citizenship.

#### IV

##### EQUAL OPPORTUNITIES

19. The first condition for securing equality of opportunity and achieving a national minimum is assurance of gainful employment for every one who seeks work. In an underdeveloped country, failure to provide full employment can be traced to certain fundamental deficiencies in the economic structure. Until the industrial base has been greatly strengthened and education and other social services developed, the economy is unable to achieve a rate of growth sufficient to provide work at an adequate level of remuneration to the entire labour force. These processes of development necessarily take time and call for a scale of effort and investment which may be well beyond the capacity of the economy in the early stages. Poverty is most acute in areas which have heavy pressure of population or in which, on account of the scanty

development of local resources, low levels of productivity persist and there is lack of continuous work. There must, therefore, be additional opportunities for work to enable the lowest income groups to earn enough through productive employment to meet their minimum needs. In the Third Plan, it is envisaged that, along with programmes of development for large and small industries, for agriculture and for economic and social services, there will also be a large-scale programme for rural works especially in densely populated regions and for periods of under-employment during the slack agricultural seasons.

20. In advanced countries the development of education and other social services has played a large part in ensuring greater equality of opportunity to different sections of the population and greater social mobility. Social services have also helped to bring about a measure of redistribution of income and provide the basic necessities. In India too, the expansion of social services will exert a similar influence, specially through the extension of free and universal education at the primary level, provision of larger opportunities for vocational and higher education, grants of scholarships and other forms of aid, and improvement in conditions of health, sanitation, water supply and housing. Thus, programmes for the welfare of scheduled tribes and castes and other backward classes, for the provision of minimum amenities in rural areas, for local development at the village level and for the housing of industrial workers and slum clearance and improvement, are to be viewed not merely as extensions of social services but as vital ingredients in the scheme of economic development. These and other social benefits have to be provided to a greater extent in the Third and subsequent Five Year Plans than has been possible over the past decade. They will call for larger resources, not only from the State, but also from within each community, and for the participation of a growing number of voluntary workers.

21. As economic development proceeds, social security and insurance will come to have high priority. Through the scheme of provident funds and health insurance for industrial workers the first important steps in this direction have already been taken. In the course of the Third Plan, it is proposed to introduce a scheme of employment assistance for industrial workers and to make a small start with relief and assistance for destitute persons, orphans and physically handicapped persons without means of support or livelihood. In areas in which the rural works programme is taken in hand, facilities for registration are to be provided for persons seeking work. Thus, social services along with intensive economic development, the provision of scholarships and other facilities in the field of training and education and the beginnings of social security should go some distance in providing more equal opportunities to different sections of the community.



22. Increase in agricultural production, the growth of modern industry and of transport and power, and the development of the public and the cooperative sectors in the economy will create conditions which will make it possible to advance towards socialism and to improve living standards. These will gain greater social significance in the measure in which socialism develops at the level of the community and enlists widespread local effort. As the values of socialism and democracy become more pervasive, influencing everyday attitudes and behaviour, wider opportunities will open up for all sections in the community, and especially for the under-privileged.

23. A large segment of India's development plans reaches the mass of the people through community development. In promoting the growth of socialism at the level of the community amongst the rural people, therefore, the role assigned in the Five Year Plans to the community development movement should be specially stressed. Community development must seek, above all, to bring about increase in agricultural production, higher standards of productivity, and fuller utilisation of the available manpower and other resources. With its stress on the development of local initiative and responsibility and on cooperative self-help, the movement is designed to serve as a spearhead of a wide range of programmes of development, which include agriculture, cooperation, irrigation, village and small industries, rural electrification and the reform of the agrarian system. One of its major aims is to create conditions for the growth of a progressive cooperative rural economy with a diversified occupational structure in which the weaker sections of the community are brought speedily to the level of the rest. The development of a cooperative agro-industrial economy in rural areas is essential for ensuring that the benefits of industrialisation spread out evenly among different sections of the population and to different areas and for securing a large measure of integration between rural and industrial development in each region.

24. A recent development of the community development movement in the rural areas has been, what is called, Panchayati Raj, or democratic decentralisation. At the village, block and district levels, responsibility for development is entrusted to Village Panchayats, Panchayat Samitis and Zila Parishads, and they are given considerable powers. This is a revolutionary change in the structure of administration within the district and in the pattern of rural development, and is already producing significant results and changing the rural climate.

25. In the villages the task of building up socialism at the base is facilitated as the policies of land reform and cooperative development are implemented and as the approach of bhoodan and gramdan and of common obligations begins to permeate within each rural community. In

the towns and cities also there is equal need for appropriate social policies. The influx of population into urban areas leads not only to a worsening of living conditions for large sections of the population but also, through rise in the values of land and property, to the creation of new disparities. These developments demand a variety of measures, including careful planning of the use of land, large scale programmes for land acquisition, housing and land allotment policies designed to assist the lower income groups and the poorer sections of the population, adequate taxation of capital gains and urban properties, avoidance of conspicuous and wasteful forms of construction, and public vigilance over conditions of tenancy and rents.

## V

### DISTRIBUTION OF ECONOMIC POWER

26. The growth of the corporate private sector over the past decade has brought to the fore the question of the means by which economic growth will be secured without concentration of economic power and the emergence of monopolistic tendencies. As a rule, the process of rapid economic development tends to enlarge opportunities for well-established firms to expand their size and enter new fields of enterprise. As compared to new undertakings or to smaller enterprises, they enjoy advantages in organisation and expertise, in access to the capital market and ability to secure foreign collaboration and, generally, in the resources which they are in a position to deploy. The fact that a significant proportion of the resources available for investment in industry arises within the corporate sector itself is another factor which makes it easier for an existing unit to expand than for a new one to come into being and take firm root. In several industries technological considerations favour the setting up of large-scale units with resultant savings in capital cost and in the cost of production. Consequently, certain difficult problems arise. On the one hand, to the extent to which large existing enterprises undertake development in accordance with the priorities set in the Five Year Plans and avail of essential economies of scale, they assist the growth of the economy. On the other, excessive economic power in relatively few hands and the uses to which it may be put, disturb the balance of power in a democracy, expose the social structure to new strains and tensions, and come in the way of diffusion of economic opportunities.

The tendency towards concentration of economic power has to be countered in a variety of ways—firstly, through the extension of the public sector into fields requiring the establishment of large scale units and heavy investments; secondly, through widening opportunities for new entrants and for medium and small-sized units as well as for industries organised on cooperative lines; and, thirdly, through effective exercise of

Government's powers of control and regulation and use of appropriate fiscal measures. The object, briefly, must be not merely to prevent concentration of economic power and the growth of monopolistic tendencies, but also to promote a pattern of industrial organisation which will lead to high levels of productivity and give full scope, within the framework of national planning, to new entrepreneurs, to medium and small-scale enterprises and to cooperative organisations.

27. As a decisive instrument which the State can employ in preventing concentration of economic power and growth of monopolistic tendencies, the rapid expansion of the public sector serves a twofold purpose. It helps to remove certain basic deficiencies in the economic structure and, at the same time, it reduces the scope for accumulation of wealth and large incomes in private hands. In the generation and distribution of electric power, the public sector has now the principal share and is being rapidly enlarged. Its share in transport has also steadily increased. In large industries and minerals the total investment in the public sector during the Third Plan will be distinctly higher than that in the private sector. As compared to 1950-51, by the end of the Third Plan, the contribution of the public sector will increase from less than 2 per cent to nearly a fourth in organised manufacturing industries and from less than a tenth to over a third in mineral production. While these are significant developments, careful attention must be given to factors which will increase the capacity of the public sector to expand still more rapidly, such as efficiency of operation, availability of trained managerial and technical personnel in larger numbers and ability to earn large surpluses. It is also essential that to the greatest extent feasible construction and supply functions for State undertakings should be entrusted to public and cooperative agencies. As the relative share of the public sector increases, its role in economic growth will become even more strategic and the State will be in a still stronger position to determine the character and functioning of the economy as a whole.

28. Within the field of activity entrusted to the private sector, the major aim of policy is to ensure broad-based ownership in industry, diffusion of enterprise and liberal facilities for new entrants, and the growth of cooperative organisations. Means for achieving these objectives are already available to a large extent, but need to be employed by the Central and State Governments and the various agencies functioning under them more purposefully and with greater coordination than in recent years. In licensing new industrial units and sanctioning the expansion of existing units, there must be considerable vigilance in permitting the growth of large existing businesses and, in the greatest measure possible, the entry of new firms should be facilitated and small and medium enterprises and cooperative organisations encouraged. In

recent years a number of financial and promotional institutions have been established, such as the Industrial Finance Corporation, the State Finance Corporations, the Industrial Credit and Investment Corporation of India and others. In the light of the experience gained during the Second Plan, these and other financial institutions should review their existing administrative policies and practices so as to ensure that their support to new entrants into industry and to medium and small enterprises as well as to cooperative undertakings is both speedy and adequate. They should also devise suitable criteria for assessing progress in these directions. The State Bank of India as well as other commercial banks may be expected to play an increasing part in financing medium-sized, small and cooperative industries. The resources of the Life Insurance Corporation could also be of material assistance in the furtherance of these objectives. The Investment Centre recently established can assist in securing foreign exchange facilities for new enterprises. Finally, a brief reference may be made to the role of industrial estates and programmes for the development of village and small industries, rural electrification, regional planning and location of new townships which are described in later Chapters. These development programmes are among the most important positive steps under the Five Year Plans for taking the benefits of industrialisation to the smaller towns and villages.

29. In a developing economy taxation is one of the main instruments of social policy and, in accordance with the needs of the Plan, devices such as rebates, concessions and incentives have to be employed so as to prevent concentration of economic interests and to encourage new units as well as medium and small-scale businesses and cooperative undertakings. The provisions needed are already available within the existing framework of personal and corporate taxation, wealth tax, gift tax, capital gains tax and estate duty, and should be employed in an integrated manner. Problems relating to tax evasion and tax avoidance and suitable measures for dealing with them are being given careful consideration. With the passing of the Companies Act, 1956, and the amendments recently undertaken, developments in company management such as inter-corporate investment, interlocking directorships, use of internal resources and the remuneration of directors and other top management personnel can be watched more closely and steps taken to ensure that the legislative provisions concerning them are administered effectively. Powers under the Industries Development and Regulation Act can also be used to exercise control over production, distribution and prices to the extent necessary. To sum up, in dealing with the problems of concentration of economic power, there is already general agreement on the broad objectives, and the necessary legislative and other sanctions needed are in fact available for the greater part. It is, therefore, specially important in the present context

that the content of measures and of the administrative methods and practices adopted in pursuance of them should in practice subserve the wider social purpose, and the existing arrangements should be re-examined in relation to the tasks and priorities of the Third Five Year Plan.

## VI

### DISPARITIES IN INCOME

30. Before the process of economic development gathers momentum, for the larger part inequalities arise from long-established features of a traditional society, such as feudal rights and tenures, or privileges and handicaps associated with the social structure. These vestiges of the past are the first to fall. Planned development has to hasten this process so as to enable the economy to move forward with less hindrance from within. Thus, the programme of land reform, with its stress on the abolition of intermediary rights, security and rent reduction for tenants and enforcement of ceilings on agricultural holdings, was calculated to release the productive forces of the rural economy. There has been progress in this direction but, owing to inadequate implementation of tenancy reforms and delays in carrying out the programme for ceilings on agricultural holdings, this has been less than was hoped for. Greater efforts are, however, now being made to give effect to legislation enacted in the States.

31. Disparities in income and wealth which arise from industrial and economic growth raise a series of complex problems. The first of these concerns differences in levels of earned income. In advanced countries these have now been greatly reduced. On the other hand, in underdeveloped countries, unless special measures are taken in the first phases of economic development, there is a tendency for them to become even larger than before. This is due to a variety of circumstances, more especially the relative scarcity of trained personnel, lack of social mobility, and the presence of inflationary influences. The essential problem here is to reduce the spread between the higher and the lower incomes and to raise the level of the minimum. This calls, among others, for large scale programmes of training and for steps to ensure that in all branches of the economy, both in the public and in the private sector, there is rapid growth of opportunities for merit. Tax policies have an important role and should be used to bring the net earnings of those in high income brackets to reasonable levels. This is a question at present, not so much of attempting to set rigid ceilings, as of giving a general direction to public policy and to public thinking. In this connection it will be recalled that the Taxation Enquiry Commission considered a reasonable range of incomes after tax to be about

thirty times the average family income. This broad objective should be progressively realised over the next two or three Plan periods. Although, in view of the low incomes of the bulk of the population, this range represents a considerable disparity, it could be further reduced as lower incomes rise.

32. An important aspect of the problem of income disparities concerns the gap between rural and non-rural incomes which tends to widen under the impact of industrial and economic development. Increase in agricultural productivity, reduction in the dependence on land and diversification of the economic structure of rural areas through the extension of industry and the development of social services on an adequate scale, and an agricultural price policy which is both fair to the urban consumer and fully safeguards the farmer's interest, are the principal means by which the gap between rural and urban incomes can be kept within narrow limits. In a country with a large rural population, these policies have great significance.

33. In a growing economy, frequently high incomes are due in the main to the accrual of capital gains, to trading and speculative profits, and to perquisites of one kind or another which are permitted by law. A twofold approach is therefore called for. Firstly, through social policy, incomes arising from capital gains, speculation, etc. must be limited and the State should take its due share. Secondly, through extension and improvement of the tax system, steps must be taken to ensure that such incomes as do accrue are fully taxed, evasion of taxation is severely dealt with and opportunities for tax avoidance are reduced to the minimum.

34. With rapid development and expansion of employment, the incomes of the vast majority of workers in industry and services and of self-employed workers like farmers and skilled artisans may be expected to increase steadily and, on the whole, in fair relationship to productivity. Those receiving fixed incomes, falling broadly in the lower middle-class groups, inevitably face special problems on account of the long-term tendency towards rise in prices. On the other hand, in these groups, through women entering employment in larger numbers and the growth of employment, there are also wider openings for augmenting the family income. For this group, equally with those in the lowest income groups, it is important that the prices of essential commodities should be kept down and social services, especially education, health and housing, should be brought within easy reach. At the other end of the scale, the greatest attention must be given to those who are totally unemployed or suffer from serious under-employment. The provision of employment opportunities has the foremost priority for them. Along with employment, education and social service benefits should also be extended as fully as possible.

## VII

## ECONOMIC AND SOCIAL INTEGRATION

35. The socialist pattern of society provides a major line of advance in a developing economy, which is becoming increasingly complex, and in which there is constant interplay of a variety of social, economic and other elements. Its realisation is necessarily a cumulative process resulting from progress along many different paths. For several reasons, in reaching this goal there is need now for a sense of urgency and a quickening of pace. It is true that the economic foundations must be well laid if the social objectives are to be attained. At the same time, any marked lag between economic and social development creates new stresses. Precise data are at present lacking, and without these it is difficult to devise definite measures. Accordingly, an expert committee set up by the Planning Commission in October, 1960, is at present engaged in reviewing changes in the levels of living which have occurred in the course of the First and the Second Plans, in studying recent trends in the distribution of income and wealth and, in particular, in ascertaining the extent to which the operation of the economic system may have resulted in concentration of wealth and means of production.

36. Progress along each separate course has its own limitations. Sometimes, there may be conflicts between different objectives and the means available for achieving them, and these have to be reconciled. Although many gaps remain, step by step, within the scheme of planned development, the framework of socialism is being built up, but it has to be strengthened and made more purposeful in its actual working. There must be fuller and more determined implementation of accepted policies and programmes in all spheres of public administration and of economic life and more critical tests of evaluation should be adopted. Moreover, at all times there should be due stress on the moral, human and spiritual values which give meaning to economic progress. Given the necessary unity and discipline in the nation, willingness to bear the burdens of development and a greater understanding by different sections of the community of what is due from them at the present juncture, both economic and social advance can be far more rapid than is generally realised. Policies already initiated will go a long way to stimulate social mobility, strengthen such forces as the trade unions, the cooperative movement, voluntary organisations and the universities, and to create a broad-based constructive leadership in rural and urban communities. They will help to check concentration of economic power and the growth of monopoly, strengthen the bonds of cultural and economic integration, and assure to every citizen of India the right to work, to equal opportunity, and to a minimum level of living. In the last analysis, economic development is but a means to an end—the building up, through effort and sacrifice

widely shared, of a society, without caste, class or privilege, which offers to every section of the community and to all parts of the country the fullest opportunity to grow and to contribute to the national well-being.

37. Planning is a continuous process and cannot be isolated for short periods. Thus, the Third Five Year Plan is a projection and a continuation of the First and the Second Plans, and it will lead to the Fourth and subsequent Plans. Planning is a continuous movement towards desired goals and, because of this, all major decisions have to be made by agencies informed of these goals and the social purpose behind them. Even in considering a five-year period, forward and long-term planning has always to be kept in view. Indeed, perspective planning is of the essence of the planning process. As this process develops, there is a certain rhythm of expansion in the development of the people, and a sense of enterprise and achievement comes to them. They are conscious of a purpose in life and have a feeling of being participants in the making of history. Ultimately, it is the development of the human being and the human personality that counts. Although planning involves material investment, even more important is the investment in man. The people of India today, with all their burdens and problems, live on the frontier of a new world which they are helping to build. In order to cross this frontier they have to possess courage and enterprise, the spirit of endurance and capacity for hard work, and the vision of the future.



## CHAPTER II

### LONG-TERM ECONOMIC DEVELOPMENT

#### I

##### NEED FOR A PERSPECTIVE

Low levels of consumption, saving, productivity and employment, are different aspects of the central problem which India faces in common with other underdeveloped countries. Basically, the task is one of developing the natural and human resources of the country through the widest possible use of knowledge and technology, and improved organisation within the framework of a well-conceived long-term plan. A high and sustained rate of economic growth must be achieved in order to bring about a marked improvement in the level of living for the bulk of the population and to solve the problem of unemployment.

2. For several decades, the Indian economy was almost stagnant, developing at a rate barely exceeding the growth of population. Over the past decade it has advanced at an average rate of about 4 per cent per annum, the increase in aggregate national income being about 42 per cent. This modest increase in national income does not give a full indication of the growth potential of the economy built up specially during the Second Plan. While the income from agriculture and allied sectors, which accounts for almost one-half of the national income, has increased by a little over a third, the total income from the organised manufacturing sector has nearly doubled. Even within the sector of organised industry, the growth of the investment goods industries has been considerably faster than the average. However, as the increase in population has been greater than had been anticipated, income per head has increased only by about 16 per cent. Over the same period, due to the rapid progress of science and technology and the rates of growth secured in the advanced countries, the disparities between them and the less developed countries have widened. Experience of the past decade in India clearly shows that to make a significant impact on the level of living of the bulk of the people, the rate of economic development should be substantially stepped up, and special efforts should be made to reduce the rate at which population is increasing.

3. Against this background, it is useful to consider briefly the perspective of India's development, to attempt to identify the essential elements of the problem and to outline the approach to economic development over the next fifteen years or so. The process of development is a continuous one in which the priorities and objectives for each period are linked with a larger perspective. The real significance of the long-term perspective

lies in its value for current decisions which, in the absence of such a view, might be wrong and costly and might call for extensive corrections subsequently. A long-term plan when worked out in sufficient detail seeks to bring out the interdependence between the different sectors of the economy and assists in a clearer understanding of possible obstacles to the growth of the economy. By analysing problems of demand and supply arising from the growth of national output and the realisation of stated social objectives, it helps in taking consistent and timely decisions regarding the optimum uses of resources, the economies of scale and location, and regional distribution of economic activities. This last is particularly important because certain problems involving conflicts of a regional character in a large and diverse country like India can only be resolved in terms of a long-term plan which fits different regions into a larger design of national development. In particular, there is need for advance planning in specific terms for the industrial sector, including power, transport, scientific research and technical education. At each stage, the programmes of development in these fields have to be conceived of and accepted as a whole and extending beyond the given period. In these sectors there is constant need for coordinated effort, and the results are achieved over several years. While a long-term view of development is a useful guide in framing policies and programmes and assessing progress, it has itself to be reassessed from time to time in the light of actual achievement and experience.

4. Both the First and the Second Plans were described as phases in the long-term social and economic development of the country. The First Plan gave a simple projection of economic growth over a period of 30 years from 1951 to 1981. Certain assumptions were made concerning the rate of growth of population, the proportion of the increase in national income which might be ploughed back into investment at each stage of development, and the return by way of additional output on the investment undertaken. In this model of growth it was envisaged that the level of national income in 1950-51 could be doubled by 1970-71 and that of per capita income by 1977-78. The projections and assumptions of the First Plan were reviewed in the report on the Second Plan in relation to the performance of the economy, which went beyond the original expectations for the first five-year period, and it was suggested that, compared to 1950-51 the national income might be doubled by 1967-68 and per capita income by 1973-74. In view of the growth of population and the increase in national income actually realised during the ten years of the First and the Second Plans, it is essential that the expansion of the economy should be accelerated to the utmost extent feasible. Having regard to the increase in population and the likely trends, even with a sustained rate of growth in national income of around 6 per cent per annum, it would be difficult to fulfil the intention expressed in the Second Plan of doubling the 1950-51 level of income per head by the middle of the Fifth Plan.

5. In an underdeveloped economy with very little capital per person, a high rate of population growth makes it even more difficult to step up the rate of saving which, in turn, largely determines the possibility of achieving higher productivity and incomes. Moreover, for a given investment, a large proportion will need to be devoted to the production of essential consumer goods at the expense of investment goods industries, thereby still further slowing down the potential rate of growth.

The significance of population in relation to economic development may be judged from the results of the 1961 census. The increase in India's population between 1951 and 1961 (about 77 million) has been nearly as large as the increase (about 82 million) in the two preceding decades.

Early in 1959, on certain assumptions of birth rates and death rates, the Central Statistical Organisation (C.S.O.) had worked out a series of estimates of population growth which were accepted, pending the census, as a working basis for the preparation of the Third Plan. The following Table sets out these estimates of population growth along with a fresh set of projections provisionally worked out on the basis of the 1961 census results which may be used for purposes of planning until fuller studies can be undertaken on the basis of the detailed data obtained in the 1961 census.\*

		(in millions)			
		1961	1966	1971	1976
C.S.O. estimates (1959)	. . . .	431	480	528	578
provisional estimates (1961)	. . . .	438	492	555	625

On the basis of the present tentative estimates for 1971 and 1976, over the period 1961–76, the total increase in population may be of the order of 187 million. Corresponding to the growth of population, it is estimated that the increase in the labour force over this period may be about 70 million, of which about 17 million will be during the Third Plan. Out of this addition to the labour force, some two-thirds would need to be absorbed outside agriculture. This will obviously be a formidable task calling for a fresh assessment of the scale and pace of development required over the next 15 years.

## II

### APPROACH TO LONG-TERM DEVELOPMENT

6. On account of the various factors to which attention has been drawn above, it is imperative that over the next three plan periods all the possibilities of economic growth should be fully and effectively mobilised.

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\*The assumptions on which estimates of growth of population have been worked out are set out in a note in Appendix C.

For this purpose it is essential to proceed on the basis of a broad strategy of economic development which will ensure that the economy expands rapidly and becomes self-reliant and self-generating within the shortest possible period. The strategy visualised for the Third and later Plans emphasises specially the interdependence of agriculture and industry, of economic and social development, of national and regional development, and of the mobilisation of domestic and external resources. It also places great stress on measures for scientific and technological advance and for raising the general level of productivity, as well as on policies relating to population, employment and social change.

7. *Agriculture and the rural economy.*—Development of agriculture, based on the utilisation of manpower resources of the countryside and the maximum use of local resources, holds a key to the rapid development of the country. Crop yields are at present so low that given adequate irrigation, supplies of fertilisers, improved seeds and implements, education of the farmers in using better methods, and reform of land tenures and development of the agricultural economy along cooperative lines, large increases in levels of production can be achieved over relatively short periods. In agriculture, as in the other sectors in which a large measure of progress can be realised through the fuller exploitation of resources available within the economy, the maximum increase in production physically possible should be secured. In the present stage of development, production of sufficient foodgrains as well as of cotton, oil-seeds and other commercial crops has equal urgency. Once the capacity to produce has been created, within a comparatively short period, it can be adapted to meet the changing needs of the community. Over the period, the aims to be achieved are the development of a diversified and efficient system of agriculture, including animal husbandry, dairying, production of meat, fish, poultry, etc., provision of a balanced and adequate diet for the entire population, and the development of commercial crops to meet the increasing requirements of industry and for exports.

8. Development of agriculture calls for extension of irrigation on a large scale. It is estimated that at present the technological possibilities of irrigation in terms of gross area irrigated extend to about 175 million acres, about 100 million acres being irrigated by large and medium irrigation schemes and the rest by minor irrigation schemes. The eventual requirements of chemical fertilisers needed for realising the benefits of irrigation and assured rainfall have been recently estimated at 4 million tons of nitrogen, 2 million tons of phosphatic fertilisers and a million ton of potassic fertilisers. Even after the possibilities of irrigation have been fully secured, at least one-half of India's cultivated land will depend upon rainfall, so that soil and moisture conservation must continue to receive very high priority in the scheme of development.

9. In any long-term view, the prospects of agricultural development are closely connected with the success achieved in :

- (i) bringing about technological changes, specially the adoption of scientific agricultural practices and improved implements and other equipment;
- (ii) fuller utilisation of manpower resources in rural areas and the organisation of the maximum local effort;
- (iii) reorganisation of the rural economy along cooperative lines, including the provision of services, credit, marketing, processing and distribution, and cooperative farming;
- (iv) improved utilisation of available land resources through systematic land-use planning, extension of multiple cropping and introduction of improved cropping patterns; and
- (v) expansion of non-agricultural activities in rural areas so as to diversify the occupational structure and reduce dependence on agriculture.

These are already accepted goals and are being pursued, but in each direction, the effort must be intensified and speeded up.

10. *Basic and heavy industries.*—While agriculture and industry must be regarded as closely linked parts of the same process of development, there is no doubt that industry has a leading role in securing rapid economic advance. Because of her natural resources, India has considerable potential for industrial growth. She has extensive known reserves of iron ore, manganese, bauxite, coal, mica and atomic materials such as thorium ores. Surveys and exploration have already indicated the prospects of oil reserves. There is a large potential for hydro-electric power. With high grade iron ore available in considerable quantities India is able to produce her own steel at reasonable cost. Her potential capacity to produce steel and other basic materials relatively cheaply and the large and growing domestic market, place her in a favourable position to produce machinery and a large range of engineering, chemical and electrical goods needed for development. In turn, these will stimulate the growth of medium and small industries and expand employment both in urban and in rural areas. Thus, on foundations which have been already laid, it should be possible to build up an integrated industrial structure and expand industrial production efficiently along the lines of real comparative advantage. However, until recently, the industrial sector had a narrow base with little development of basic and heavy industries. In view of the small size of the capital and intermediate goods industry, special emphasis has to be placed on industries such as steel, coal, oil, electric power, machine-building and chemicals. These must grow speedily if the requirements of further industrialisation are to be met in adequate measure from the country's own resources. In other words, development of these industries is an essential condition of self-reliant and self-sustained growth.

11. Industrial development, and specially the development of basic and heavy industries, must be regarded as part of a comprehensive design of development which ultimately links the industrial and the rural economy, the economy of large-scale and of small-scale units, and the economy of the major industrial centres as well as of the smaller towns and villages, bringing them into a close relationship with one another, thus assuring a high degree of mobility and economic integration within the economy as a whole.

12. *Human resources and productivity.*—An essential aspect of long-term planning is that effective and speedy means should be devised for lifting the level of productivity for the nation as a whole. Through this alone can the general level of well-being be effectively raised. At the base of this entire effort are the various programmes of development for building up the country's human resources, specially education and health, measures for the development of backward classes, and programmes for raising the levels of skills and technical know-how and for scientific and technological research. It may take twenty years or more to secure the required outturn of scientific and technical personnel and build up the foundations of scientific research. The programme of expansion of trained personnel in its widest sense has necessarily to be undertaken long in advance of requirements. It is equally important that the available manpower should be used as fully and effectively as possible. The importance of the expansion of facilities for general education can be scarcely exaggerated. While free and compulsory education is being introduced for children in the age group 6-11 years, and there has been marked progress already, the next step is equally vital, namely, the provision of universal education upto the age of 14 years as envisaged in the Constitution. This goal should be fulfilled in the course of the Fourth and Fifth Plans.

13. *Population.*—A large part of the increase in output is absorbed by the growth of population. Improvement in conditions of health and sanitation will further lower the death rate, specially the rate of infant mortality, and may for a time even tend to raise the birth rate. The objective of stabilising the growth of population over a reasonable period must therefore be at the very centre of planned development. The programme of family planning, involving intensive education, provision of facilities and advice on the largest scale possible and widespread popular effort in every rural and urban community has therefore the greatest significance.

14. *Employment.*—Lags in development in a country with a large population and heavy pressure of population on land are reflected most acutely in the problem of unemployment. Until the economic structure is strengthened and the economy is able to meet its growing requirements of equipment and raw materials largely from its own resources, it is difficult to absorb even the entire addition to the labour force into increasingly productive work at a reasonable level of wages. In the period of

transition rural public works have an essential place in the scheme of development. It is hoped, however, that if development over the next three plan periods can be undertaken on the scale foreseen in this Chapter, it should be possible to expand opportunities of productive employment outside agriculture on an adequate scale.

15. *Social policy*.—In a country with a large rural population, extremely low living standards and widespread regional and cultural differences, the social aspects of development are not less important than the economic. A rapidly expanding economy is a necessary condition for resolving deep-rooted social problems. However, as it proceeds, economic development may widen disparities between rural and urban areas, increase differences in levels of development in different parts of the country, and accentuate the problems of economic inequality. The question of developing patterns of consumption appropriate to the social objectives has special significance in this connection. In any scheme of long-term development, these aspects must receive special attention, so that the social objectives outlined earlier are speedily realised.

16. *Resources for development*.—Among the principal conditions for building up a self-reliant economy, which can sustain a high rate of growth, are an adequate level of domestic capital formation, the maximum effort possible in developing exports, and availability of external assistance during the critical period of transition.

Progress in mobilising savings and in developing exports depends largely on the burdens which the community is willing to bear. As a result of development during the past decade the period of economic stagnation has been ended. For the bulk of the population, the existing levels of consumption are so low that a considerable proportion of the additional output of the economy must be devoted to the improvement of living standards. However, for many years to come, if the stock of capital and the economic and social services on which the growth of the economy depends are to be developed, only a limited rise in consumption standards will be possible, specially in commodities or services which are considered to be non-essential in the early stages of India's economic development. This is a choice which a democracy has to make with general consent in the larger interest of the community and, in turn, calls for appropriate social policies.

A basic objective in the strategy of development is to create the conditions in which dependence on external assistance will disappear as early as possible. A very large expansion in exports is essential for this purpose. The programme for the development of exports in the Third Plan aims at laying a strong foundation for a much larger export effort in the Fourth and the Fifth Plans. It involves restraints on consumption, measures to

make available the surpluses required for exports, and policies designed to raise productivity and reduce costs of production and distribution.

17. *External assistance.*—In the transitional period, the effort to develop the basic and heavy industries and machine-building capacity, without which the growth of the national economy would itself be retarded, accentuates the balance of payments problem. Replacement of imports is essentially a question of developing the necessary capacity for production within the country. A developing economy, which for its part endeavours to mobilise its own resources to the utmost extent possible, faces the difficulty that its developmental effort may entail a large increase in import requirements for specialised capital equipment and for raw materials and components, for which, for a period, it is unable to pay from its own export earnings. The need for external assistance is implicit in this situation. Such assistance has already done a great deal to hasten India's economic growth and its value can scarcely be over-estimated. Assistance from international agencies and from one country to another has a significance no less for the economic progress of the less developed countries than for the building up of a world community in which each country contributes to the development of others according to its capacity. This is an obligation which India fully accepts and, as her own economy develops, within the limits of her resources, she will endeavour to share her experience with other developing nations.

### III

#### OUTLOOK FOR 1961–76

18. At an earlier stage in the work on the Third Plan, following the suggestion in the Second Plan, a sustained rate of growth of 5 per cent per annum was visualised. With the rate of growth of population, which was assumed five years ago, this implied an increase in per capita income of a little less than 4 per cent per annum. It is now anticipated that over the next 15 years, population is likely to increase at more than 2 per cent per annum. Over this period the economy will be required to meet large and expanding demands in many fields—foodgrains and raw materials, cloth, steel, coal, power, transport, employment, education and other social services, and trained manpower. In the circumstances, it is considered that development over the next 15 years should be conceived in terms of a cumulative rate of growth as close as possible to 6 per cent per annum. This consideration has been generally kept in view in formulating physical programmes and targets for the Third Plan. If these were achieved fully and within the five year period as planned, the increase in the aggregate national income would be of the order of 34 per cent or about 6 per cent per annum. Among the important conditions to be met are the maintenance of conditions of economic stability



and keeping down of the costs of living for the bulk of the population, adequacy and timely availability of external resources, mobilisation of domestic savings of the order of over 12 per cent of the national income, fully coordinated execution of connected programmes under industry, transport and power, efficient implementation, at all levels, of agricultural and other programmes and, finally, improved techniques for planning and for the evaluation of performance. While it is vital to the success of the Third Plan that efforts in these directions should be intensified, the actual rate of growth will depend upon the measure in which the various conditions are fulfilled.\*

19. Taking a broad view of the development of the Indian economy, it is reckoned that, at 1960-61 prices, the national income should rise from about Rs. 14,500 crores at the end of the Second Plan to about Rs. 19,000 crores at the end of the Third Plan, about Rs. 25,000 crores at the end of the Fourth and about Rs. 33,000 to 34,000 crores at the end of the Fifth Plan. Allowing for the increase in population, on these estimates income per head should go up from around Rs. 330 at the end of 1960-61 to about Rs. 385, Rs. 450 and Rs. 530 in 1966, 1971 and 1976. Increase in the volume and rate of investment implied in these estimates of national and per capita incomes will not be easy to achieve. However, against the background of resources and knowledge which science and modern technology provide and the greater understanding of social and economic processes now available, it is considered that the objectives set forth above are well within the range of practical fulfilment.

20. Development on the scale described above, which must indeed be improved upon in actual achievement, has several important implications. It calls for intensive and continuous effort to utilise fully the manpower resources of the country, to make the most efficient use possible of resources available for investment, to mobilise domestic savings and channel them into appropriate directions, and to secure adequate surpluses from internal production for expanding export. Net investments as a proportion of national income would have to rise from about 11 per cent at present to 14-15, 17-18, and 19-20 per cent per annum by the end of the Third, Fourth and Fifth Plans. In other words, as compared to about Rs. 10,500 crores postulated for the Third Plan, net investment over the Fourth and the Fifth Plan periods should be of the order of Rs. 17,000 crores and Rs. 25,000 crores. Domestic savings would have to rise in corresponding measure from about 8.5 per cent at present to about 11.5, 15-16, and 18-19 per cent of the national income at the end of the Third, Fourth and Fifth Plans. It is also implied that progressively external aid will form a diminishing proportion of the total

\*The suggestion in Chapters IV and V that the Third Plan should aim at securing an increase in national income of 'over 5 per cent' per annum is in the nature of an overall judgment based on the consideration of these conditions.

investment, and by the end of the Fifth Plan the economy will be strong enough to develop at a satisfactory pace without being dependent on external assistance outside of the normal inflow of foreign capital.

21. As stated earlier, a considerable part of the practical interest of long-term plans lies in the guidance they provide for current action and decisions and in the forward planning which they facilitate. These considerations are of special importance in the basic industries. In these, technical and other problems involved in coordinated development, implications in terms of physical resources and foreign exchange, and questions relating to the location of economic activities call for prolonged study and preparation. In the course of preliminary studies on the Third Plan the following tentative targets of capacity have been suggested for some important items for 1970-71 :

item	unit	capacity target
steel ingots . . . . .	million tons	18—19
pig iron . . . . .	million tons	3—4
aluminium . . . . .	thousand tons	230—250
electric power . . . . .	million kW	21—23
coal . . . . .	million tons	170—180
oil refining . . . . .	million tons	18—20
nitrogenous fertilisers . . . . .	million tons (N)	2.0—2.2
cement . . . . .	million tons	24—26
machine-building . . . . .	Rs. crores of output	1600
railway freight transport—long distance		
originating traffic . . . . .	million tons	380—420
foodgrains . . . . .	million tons	125
exports . . . . .	Rs. crores	1300—1400

These targets indicate the order of effort called for and could form a useful basis for further studies at the technical level.

#### IV

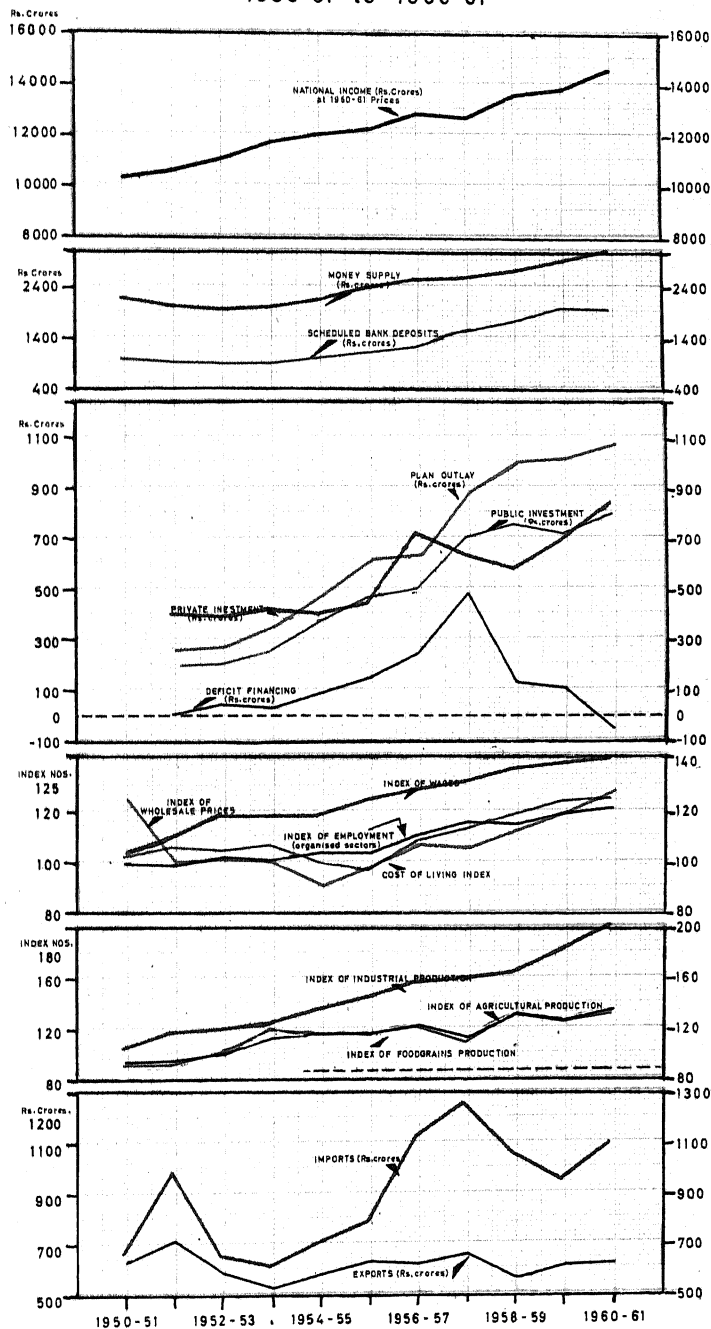
##### PREPARATION OF A LONG-TERM DEVELOPMENT PLAN

22. In recent years considerable progress has been made in developing new techniques and concepts for the formulation of long-term plans of development. Their use for purposes of economic planning depends largely on the quality of the statistical and technical information available. Accordingly, in the Third Plan special steps are being taken to improve the available statistical and technical data. These will be particularly required for analysing the complex relationships, and correct proportions between different branches of the developing economy. In each stage of development the whole programme has to be viewed as a continuous physical process. The right quantities of raw materials, intermediate products, machinery and essential services such as power and transport as well as the requisite trained personnel have to be available at the right time; the outputs of all sectors of the economy

have to be utilised either for investment or for consumption at the right time; the availability of domestic savings and of foreign exchange have to satisfy the requirements of production and consumption at the right time. A considerable amount of economic, technical and statistical analysis has to be undertaken. This would include estimation of the demand for goods and services by consumers at the end of each given period, studies of inter-industry relations with a view to ascertaining the demand for intermediate goods, raw materials, and technical personnel and determination of investment requirements as well as possibilities of import saving and the development of exports.

23. A long-term plan of development embodying specific programmes and policies is an essential condition of successful planning for a country with deep-rooted social and economic problems, a large and growing population and widely varying conditions. Such a plan should be conceived not merely in broad national terms but should take into account the possibilities of development of resources in different regions of the country so as to spread the benefits of development as widely as possible without slowing down growth itself. The long-term plan should therefore supply a general pattern of economic and social development which would take into consideration the needs and possibilities of different areas and harmonise these into an integrated endeavour for national advancement. For working out a long-term plan on these lines, there is need for close and continuous collaboration between various Government agencies at the Centre and in the States and leading institutions engaged in scientific, economic and social research. The outline of the long-term plan will be filled in as more data and knowledge become available, and the Plan itself will be adjusted from time to time, in keeping with technological developments, greater knowledge of resources and the progress achieved in different branches of the economy. Work along these lines has already been initiated in the Planning Commission as well as by independent research institutions, and in the course of the next three years it is proposed to devote substantial resources to the preparation of an overall plan of development covering the period upto the end of the Fifth Plan.

# SELECTED ECONOMIC INDICATORS 1950-51 to 1960-61





### CHAPTER III

## TEN YEARS OF PLANNING

### FIRST AND SECOND PLANS

THE completion of the Second Five Year Plan in March, 1961, marked also the end of the first decade of India's planned development. During this decade there has been rapid expansion of the Indian economy, the outlines of the country's future social and economic structure have been established, and foundations have been laid for the achievement of the basic objectives and the long-term economic goals set out in the preceding Chapters.

2. The First Five Year Plan took over several projects which had been worked out earlier and integrated them into a well-knit scheme of economic and social development embracing every part of the country. Through its emphasis on agriculture, irrigation, power and transport, the Plan aimed at creating the base for more rapid economic and industrial advance in the future. In stressing the place of social change and institutional reforms in the economic development of the country, the Plan initiated some of the basic policies which were further developed under the Second Plan.

The reform of an antiquated land system which was inhibiting agricultural production, setting up a nation-wide agricultural extension service as part of a comprehensive community development programme, revitalisation of the cooperative movement, expansion of irrigation and power facilities on a large scale, strengthening and improving the administrative structure of the country, and establishing a number of specialised institutions for providing credit to agriculture and industry, for developing small scale industries and for giving special assistance to backward sections of the population were some of the notable features of the First Plan. The Plan focussed the nation's attention on the vital need for planned effort for achieving rapid economic growth as well as social justice. It offered to the people not only the objectives for which to work, but also the means with which to realise them through mutual self-help and cooperation and the mobilisation of local resources.

3. While the Second Plan carried the basic policies initiated under the First Plan a step further and aimed at a larger increase in invest-

ment, production and employment, its main contribution was to direct the economy towards the next important stage which followed logically from the policy of planned development which the country had already accepted. It placed special emphasis on the development of basic and heavy industries for, with the advantages in natural resources which India already possessed, this was an essential element in the strategy for speeding up the development of the national economy over the next 15 or 20 years. The Plan also defined more clearly the key role that the public sector was to play in the economic development of the country. Along with the emphasis that it put on accelerating the rate of growth of the national economy and creating conditions for more rapid development in future, the Second Plan placed before the nation the goal of the socialist pattern of society. It also set the objectives of increasing employment opportunities and reducing disparities in income and wealth and bringing about a more even distribution of economic power.

4. As a result of economic planning, there was a substantial increase in the rate of investment, especially in directions calculated to accelerate the economic development of the country. The total investment, public and private, in the economy increased from over Rs. 500 crores per annum at the beginning of the First Plan to Rs. 850 crores at its end and reached an annual level of about Rs. 1600 crores at the end of the Second Plan. Corresponding figures for investment by public authorities are about Rs. 200 crores, Rs. 450 crores and Rs. 800 crores. Reckoned at current prices, the total investment during the two Plans was Rs. 10,110 crores, Rs. 5210 crores in the public sector and Rs. 4900 crores in the private sector. Details for the two Plans are given below:

Table 1: Outlay and investment in First and Second Plans\*

sector	(Rs. crores)		
	First Plan 1951-56	Second Plan 1956-61	total 1951-61
public sector outlay	1960	4600	6560
public sector investment	1560	3650	5210
private sector investment**	1800	3100	4900
total investment	3360	6750	10110

\*At current prices

\*\*Private sector investment was shown earlier at Rs. 1600 crores for the First Plan and at Rs. 2400 crores for the Second Plan. These estimates have been revised in the light of fuller information. They exclude transfers from the public sector.

5. The distribution of outlay in the public sector as between different heads of development is shown in the following Table:

Table 2: Distribution of outlay

head	(Rs. crores)			
	First Plan		Second Plan	
	expendi- ture	percen- tage	expendi- ture	percen- tage
agriculture and community development	291	15	530	11
major and medium irrigation . . .	310†	16	420	9
power . . . . .	260	13	445	10
village and small industries . . .	43	2	175	4
industries and minerals . . . .	74	4	900	20
transport and communications . .	523	27	1300	28
social services and miscellaneous .	459	23	830	18
total . . . . .	1960	110	4600	100

The changes in distribution of outlay reflect the changes in emphasis in the two Plans. In the First Plan relatively greater stress was placed on programmes designed to build up the agricultural potential of the country. Consequently, programmes for agriculture and irrigation comprised 31 per cent of the Plan outlay. In the Second Plan, greater emphasis was given to industrial development and the relative share of industries and minerals increased from 4 per cent to 20 per cent. Transport and communications were given high priority in both the Plans. Social services and miscellaneous heads comprised 23 per cent of the First Plan outlay and 18 per cent of the Second Plan outlay.

#### PATTERN OF FINANCING

6. The financing of the public sector outlay in the two Plans was as follows:

Table 3: Financial resources in the public sector

	(Rs. crores)			
	First Plan		Second Plan	
	actual	percen- tage	estimated	percen- tage
outlay on the Plan . . . . .	1960	100	4600	100
internal resources . . . . .	1772	90	3510@	76
external assistance . . . . .	188	10	1090*	24

†Includes flood control.

@Includes subscriptions to Government loans by (i) Reserve Bank and by (ii) State Bank out of P.L. 480 deposits.

\*Includes investment of P. L. 480 funds in 1960-61 by Reserve Bank in special securities.



During the Second Plan in particular, there was a substantial step-up in the tax effort. A number of new direct and indirect taxes were introduced. The gap in resources was made up partly through deficit financing and partly through external assistance. During the earlier years of the Second Plan, budgetary deficits were rather high. An attempt was, however, made in the later years to reduce them. Actual deficit financing during the Second Plan was roughly of the order of Rs. 948 crores.

7. The balance of payments did not present a problem during the First Plan period. The actual deficit amounted to Rs. 318 crores over the Plan period. It was met to the extent of Rs. 196 crores by external assistance and Rs. 122 crores by withdrawals from the country's foreign exchange reserves. The Second Plan which put greater stress on industrialisation naturally required heavier expenditure of foreign exchange. The Second Plan Report estimated the aggregate deficit in the balance of payments over the five-year period at about Rs. 1100 crores and assumed that about Rs. 800 crores out of this would be met by external assistance. The Plan ran, however, into unexpected balance of payments difficulties from the very start and had to be reappraised in 1958. Stringent restrictions had to be imposed on less essential imports. Foreign exchange reserves had to be drawn down by Rs. 600 crores in the Second Plan period. In addition, external assistance of the order of Rs. 872 crores was utilised in the public as well as private sectors, besides commodity imports of Rs. 534 crores under the P.L. 480 assistance and net drawals from the International Monetary Fund of the order of Rs. 55 crores.

8. The record of growth over the last ten years has not been uniform. There have been significant ups and downs—occasionally due to natural causes or international developments and sometimes due to deficiencies in implementation. During the First Plan, owing largely to the progress recorded by agricultural production, the national income increased by 18 per cent as against a target of 12 per cent. During the Second Plan, on the other hand, the increase in national income was 20 per cent as against a target of 25 per cent.

9. Taking the decade as a whole, however, the picture is one of overall progress. Basic facilities like irrigation, power and transport which are essential for agricultural and industrial development have been greatly expanded. Valuable mineral deposits have been opened up to feed industries, small and large. A number of projects have been completed in spite of delays caused chiefly by the foreign exchange crisis and have either already come into production or will do so in the immediate years ahead. Agricultural production has expanded by about 41 per cent and output of foodgrains by 46 per cent. The net output of organised manufacturing industries has nearly doubled. The share of the public sector industries in it has gone up from 1.5 per

cent to 8.4 per cent and much of this increase has been in key industries like steel, coal mining and heavy chemicals. This has been accompanied by a large expansion of electric power generating capacity and considerable improvement in the expansion of the country's transport and communications system, mainly in the public sector. There has been a general expansion of organised industries and the paid up capital of companies at work has more than doubled. At the same time, there has been also substantial development in village and small industries. Facilities for education and technical training have become much more widespread than before. The number of hospitals and dispensaries has significantly increased, special measures have been taken to eradicate malaria, and there has been a general improvement in health conditions, resulting in substantial increase in the survival rate. The increase in national income has been 42 per cent over the last decade; but, owing to the increase in population, the increase in income per capita has been 16 per cent.

10. A general view of the growth of the economy over the last decade may be obtained from the selected indicators given in the Table below and the data set out more fully in Annexure I to Chapter V.

Table 4: Selected indicators of growth

item	unit	1950-51	1955-56	1960-61	percen- tage increase in 1960-61 over 1950-51
national income at 1960-61 prices	Rs. crores	10240	12130	14500	42
population	millions	361	397	438	21
per capita income at 1960-61 prices	Rs.	284	306	330	16
index of agricultural production	1949-50=100	96	117	135	41
foodgrains production	million tons	52.2*	65.8*	76.0	46
nitrogenous fertilisers consumed	ooo tons of N	55	105	230	318
area irrigated (net total)	million acres	51.5	56.2	70.0	36
cooperative movement : advances to farmers	Rs. crores	22.9	49.6	200.0	773
index of industrial production	1950-51=100	100	139	194	94
production of : steel ingots	million tons	1.4	1.7	3.5	150
aluminium	ooo tons	3.7	7.3	18.5	400
machine tools (graded)	value in Rs. crores	0.34	0.78	5.5	1518
sulphuric acid	ooo tons	99	164	363	267
petroleum products	million tons	—	3.6	5.7	..

\*Estimates of production adjusted for changes in statistical average and methods of estimation upto 1956-57.

item	unit	1950-51	1955-56	1960-61	percentage increase in 1960-61 over 1950-51
cloth :					
mill-made	million yards	3720	5102	5127	38
khadi, handloom and powerloom	million yards	897	1773	2349	162
total	million yards	4617	6875	7476	62
minerals :					
iron ore	million tons	3.2	4.3	10.7	234
coal	million tons	32.3	38.4	54.6	69
exports	Rs. crores	624	609	645	3
power : installed capacity	million kW	2.3*	3.4*	5.7	148
railways : freight car- ried	million tons	91.5	114.0	154.0	68
roads : surfaced including national highways	ooo miles	97.5	122.0	144.0	48
commercial vehicles on road	ooo numbers	116	166	210	81
shipping	lakh GRT	3.9	4.8	9.0	131
general education :					
students in schools	million numbers	23.5	31.3	43.5	85
technical education :					
engineering and techno- logy— degree level—intake	ooo numbers	4.1	5.9	13.9	239
health :					
hospital beds	ooo numbers	113	125	186	65
doctors (practising)	ooo numbers	56	65	70	25
consumption levels :					
food	calories per capita per day	1800	1950	2100	17
cloth	yards per capita per annum	9.2	15.5	15.5	68

The progress achieved in different sectors of the economy is briefly reviewed below:

#### AGRICULTURE

11. The trend of agricultural production since 1949-50 is shown in the following Table:

Table 5: Index number of agricultural production

group	(1949-50=100)	1950-51	1955-56	1960-61
all crops		96	117	135
food crops		91	115	132
other crops		106	120	142

In spite of fluctuations from year to year, there was unmistakable evidence of expansion. The cumulative rate of growth was about 3.5

\*Figures relate to calendar years, 1950 and 1955.

per cent per annum and was much higher than in any previous decade. The average level of foodgrains production of about 50 million tons in the preceding decade was exceeded early in the First Plan and amounted to over 76\* million tons in 1960-61 as against 57.6 million tons in 1949-50 and 52.2 million tons in 1950-51. The yield per acre also rose significantly over the decade. The average yield of rice per acre, for example, increased from 694 lb in the quinquennium 1946-47 to 1950-51 to 727 lb during the First Plan period and 807 lb in the Second Plan period. The increase in production of major agricultural commodities has been as follows:

Table 6: Production of major crops

crop	unit	1950-51	1955-56	1960-61
foodgrains (cereals and pulses) . . . . .	million tons	52.2	65.8	76.0
oilseeds . . . . .	million tons	5.1	5.6	7.1
sugarcane (gur) . . . . .	million tons	5.6	6.0	8.0
cotton . . . . .	million bales	2.9	4.0	5.1
jute . . . . .	million bales	3.3	4.2	4.0

12. The total outlay on agriculture, community development and irrigation amounted to Rs. 1551 crores during the decade. The principal agricultural production programmes undertaken related to extension of irrigation, supply of chemical fertilisers, development of local manurial resources, multiplication and distribution of improved seeds, adoption of improved agricultural practices and land reclamation and development.

13. The net area irrigated is estimated to have increased from 51.5 million acres in 1950-51 to about 70 million acres in 1960-61. The major and medium irrigation projects started in the First and Second Plans, are expected to create potential for irrigation of about 38 million acres on full development. About 4 million acres were reclaimed by the end of 1960-61. Mechanical cultivation was extended to 0.5 million acres and land improvement to about 1.5 million acres. About 4000 seed farms were established under a scheme to cover the entire cultivated area of the country with improved seeds. The consumption of nitrogenous fertilisers (in terms of N) increased from 55,000 tons to 230,000 tons and of phosphatic fertilisers (in terms of  $P_2O_5$ ) from 7000 tons to 70,000 tons between 1950-51 and 1960-61. Attention was also given to the development of urban compost and local manurial resources. By the end of the Second Plan 11.8 million acres were estimated to have been brought under green manuring. About 2.7 million acres were

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\*Latest estimates indicate that foodgrains production in 1960-61 may be over 78 million tons.

covered by soil conservation measures. Measures were also taken for the development of livestock and fisheries, milk supply, vegetable and fruit cultivation and afforestation. For example, production of milk went up from 17 million tons to 22 million tons and of fish from 0.7 million tons to 1.4 million tons. Afforestation programmes covered about 0.5 million acres.

14. Besides the formulation and implementation of programmes for development, the First and Second Plans also envisaged a reorganisation of the agrarian structure. Measures in this direction consisted of the abolition of intermediaries (such as zamindars and jagirdars), protection and improvement of tenancy rights and the imposition of ceilings on land holdings. Efforts were also made in several States to encourage consolidation of holdings. The programme for ameliorating the economic condition of agricultural labourers included settlement on fallow and reclaimed lands and fixation of statutory minimum wages.

15. Among the most significant developments in the agrarian economy during the past decade, mention may be made of the introduction of the extension services throughout the country as an integral part of the community development movement and democratic decentralisation of rural development work. At the end of the Second Plan the community development movement covered about 370,000 villages and well over half of the country's rural population. About 60,000 village level workers and technical officers were given special training in extension work. To carry this programme further and make it more effective, responsibility for development is being transferred to people's institutions at and below the district level, so as to secure complete involvement of the people both in the formulation and implementation of development programmes. The village would constitute the primary unit and the responsibility and initiative for social and economic development at the village level would be placed fully on the village panchayat and the village cooperative. The cooperative movement has made considerable progress during the last decade. By the end of the Second Plan, there were 210,000 primary agricultural societies—almost double the number in 1950-51. About 1870 cooperative marketing societies and 41 cooperative sugar factories were set up. A number of useful experiments were initiated in cooperative farming and a National Cooperative Farming Advisory Board was established to promote the growth of cooperative farming.

#### INDUSTRY

16. The past decade has witnessed striking development in industry—in terms of the rate as well as the pattern of industrial growth. Some

idea of the trend may be obtained from the following indices of industrial production:

Table 7: Index number of industrial production\*  
(1950-51 = 100)

group	1955-56	1960-61
general index . . . . .	139	194
cotton textiles . . . . .	128	133
iron and steel . . . . .	122	238
machinery (all types) . . . . .	192	503
chemicals . . . . .	179	288

17. The index number of industrial production thus recorded a cumulative rate of expansion of about 7 per cent per annum. The actual increase was, in fact, more pronounced than indicated by the above figures, because a number of new industries which have generally shown more marked progress, are at present not adequately provided for in the index.

18. Even more significant than the quantum of industrial development has been the direction in which the expansion has taken place, especially under the Second Plan. During the First Plan period what had been initially proposed for large industry was chiefly to encourage the already existing factories to use their capacity to the full. Industrial production, even with this mild stimulation, rose by 39 per cent during the quinquennium.

19. With the successful completion of the First Plan, it was possible to take up in a large way the development of new industries, especially the capital and producer goods industries, which constitute the basis for any programme for accelerated industrial growth. Judging by the progress so far achieved by the metallurgical, mechanical and electrical engineering and chemical industries in augmenting industrial potential and taking cognisance of the heavy machine-building projects recently initiated, it can be stated that some of the basic conditions required for an accelerated growth towards the goal of a self-reliant economy have been successfully established over the last decade.

20. A key role was assigned to the public sector in the development of basic and heavy industries. Total public sector outlay on industries and minerals amounted to Rs. 974 crores over the decade. Investment in the Second Plan period alone amounted to as much as Rs. 870 crores in the public sector or 56 per cent of the total investment in organised

\*This index is the same as the official index except that the comparison base has been changed from the calendar year 1951 to the financial year 1950-51 so as to facilitate measurement of growth over the Plan periods.

industry, public and private. What is more important, most of the public sector industries were of a heavy or basic type. This development has not only helped to strengthen the public sector, but also to create conditions conducive to a rapid growth of medium and light industries in the private sector.

21. A major step forward was taken with the establishment of three new steel plants in the public sector and the expansion of the two units in the private sector. The new projects have now reached the stage of production and the output of steel ingots has increased from 1.4 million tons in 1950-51 to 3.5 million tons in 1960-61 and of pig iron from 3.5 lakh tons to 9 lakh tons. The availability of other essential industrial materials like aluminium, cement, heavy chemicals and dyestuffs, of fuels such as coal and petroleum, and of power has also increased substantially since 1950-51.

22. Another significant development has been the rapid growth of machine-building industries. India is now producing progressively increasing quantities of machine tools and machinery for use in agriculture and transport and for such industries as chemicals and pharmaceuticals, textiles, jute, cement, tea, sugar, flour and oil mills, paper, mining etc. Indigenous manufacturing capacity now exists for most of the machinery and equipment needed by the railways, except diesel and electric locomotives. A large variety of electrical equipment and scientific instruments are also now being produced in the country. The value of graded machine tools produced in the country has increased from Rs. 34 lakhs in 1950-51 to Rs. 550 lakhs in 1960-61. Steps have been recently taken for the establishment of a heavy machine-building plant and the foundry/forging plant at Ranchi and the coal mining machinery plant at Durgapur. The aggregate value of the various kinds of industrial machinery and capital goods was eleven times as much as at the beginning of the decade. The Heavy Electrical Project at Bhopal has entered the stage of initial production. When all stages are completed Rs. 25 crores worth of equipment will be produced.

23. The progress made by chemical industries, particularly pharmaceuticals, heavy chemicals and fertilisers, has also been significant and capacity of production for a wide range of primary organic chemicals has been stepped up.

24. Modernisation and re-equipment of important industries, such as jute, cotton textiles and sugar have made progress. In the case of the jute industry, the programme is at an advanced stage on the spinning side. The bulk of the machinery required for the modernisation of the jute industry in the preparatory and spinning departments has been manufactured within the country.

25. Another achievement during the period under review was the progress made in increasing the indigenous content of industrial products manufactured in the country. Yet another indicator of the country's industrial development is the production of a growing number of new industrial items e.g. industrial boilers, milling machines and other types of machine tools, tractors, industrial explosives, sulphur and antibiotic drugs, D.D.T., newsprint, motor-cycles and scooters, calcium carbide, dyestuffs, staple fibres, etc.

26. There has been also considerable progress in consumer industries. The production of older industries like textiles and sugar recorded substantial expansion. Yet more rapid progress was made in industries manufacturing durable items such as automobiles, bicycles, motor-cycles, scooters, fans, radios, electric lamps and sewing machines.

27. The following Table gives some idea of the progress made in the production of important producer and consumer goods during the last decade:

Table 8: Production in selected industries

item	unit	1950-51	1960-61
steel ingots . . . . .	million tons	1.4	3.5
aluminium . . . . .	ooo tons	3.7	18.5
diesel engines . . . . .	ooo numbers	5.5	40
electric cables (ACSR conductors) . . . . .	ooo tons	1.7	22.0
nitrogenous fertilisers (in terms of N) . . . . .	ooo tons	9	110
phosphatic fertilisers (in terms of $P_2O_5$ ) . . . . .	ooo tons	9	55
sulphuric acid. . . . .	ooo tons	99	363
cement . . . . .	million tons	2.7	8.5
cotton textiles (mill-made) . . . . .	million yards	3720	5127
sugar * . . . . .	million tons	1.1	3.0
paper and paper board . . . . .	ooo tons	114	350
bicycles (organised sector only) . . . . .	ooo numbers	101	1050
automobiles . . . . .	ooo numbers	16.5	53.5

#### MINERALS

28. Another notable feature of the period under review was the attention given to mineral exploitation and production. The organisations for the exploration, assessment and exploitation of the country's

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\*Relates to crop year, November-October.



mineral resources were considerably strengthened. The principal minerals in respect of which more successful exploitation and production were recorded were coal, iron ore and bauxite. The production of coal increased from 32.3 million tons in 1950-51 to 54.6 million tons in 1960-61 and of bauxite from 64,000 tons in 1950 to 377,000 tons in 1960. Most of these increases took place in the Second Plan period.

29. While the output of mineral oil within the country is as yet small, valuable oil resources have been found in Náhorkatiya area in Assam and indicators obtained of a sizeable oil field in Cambay—Ankleshwar area in Gujarat. Prospecting operations are in progress in other areas as well. In view of the importance of establishing indigenous sources of oil, an Oil and Natural Gas Commission was set up for undertaking, on an intensified scale, geological surveys, geophysical investigations and exploratory drilling for oil. Construction of two refineries at Nunmati and Barauni was taken up in the public sector and the Indian Oil Company, a Government agency for the distribution of oil products, was formed in 1959.

#### VILLAGE AND SMALL INDUSTRIES

30. The development of village and small industries as an integral element in an expanding national economy has been from the beginning, one of the key programmes under the Five Year Plans. They were expected to lead to fuller use of local resources, meet a significant part of the expanding demand for consumer goods, form a vital link between agriculture and large-scale industries, and provide increasing opportunities for employment—both in rural and in urban areas. During the last decade, Rs. 218 crores have been spent by Government for the development of these industries. All-India Boards were set up with a view to formulating, guiding and, to an extent, implementing coordinated programmes for the development of small scale industries, handloom industry, khadi and village industries, handicrafts, coir and sericulture. An industrial extension service was developed and Small Industries Service Institutes were set up in every State and 53 Extension Centres were also established. About 60 industrial estates comprising over 1000 small factories using power were established. Special arrangements were made for the provision of credit, technical advice and raw materials and the supply of imported and indigenous machines on hire-purchase terms. The growth of a vigorous class of small entrepreneurs was a significant development of the last ten years. In a number of industries, notably, machine tools, sewing machines, electric motors and fans, bicycles, builders' hardware and hand tools, there have been increases in production varying from 25 to 50 per cent during the last five years. Production would have been much larger but for the shortage of some basic raw materials like steel and non-ferrous metals. Among the tradi-

tional industries, which provide considerable employment, the production of handloom cloth increased from 742 million yards to about 1900 million yards, of khadi from 7.3 million yards to 74 million yards and of raw silk from about 2.5 million lb to 3.6 million lb between 1950-51 and 1960-61. Steps were taken during this period to introduce a scheme for enlarging credit facilities for small scale industries from banking agencies by providing Government guarantee, to assist weavers' cooperatives to purchase powerlooms and to manufacture and distribute an improved type of spinning wheel (Ambar charkha).

### POWER

31. Provision of adequate power is one of the basic requirements for the development of both large and small scale industries. A number of hydro-electric and thermal power projects were constructed during this period and the total public sector investment in power amounted to Rs. 705 crores. The four multi-purpose projects, Damodar Valley, Bhakra-Nangal, Tungabhadra and Hirakud, which were begun before the First Plan, were incorporated in the integrated programme of river valley development. Among the river valley projects started during the last decade, mention may be made of Chambal, Rihand, Koyna and Nagarjunasagar. A large programme for thermal power generation was also undertaken. The installed capacity of hydro-electric power increased from 0.56 million kW to 1.93 million kW and of thermal power from 1.74 million kW to 3.77 million kW during the last decade. The total installed capacity thus rose from 2.3 million kW in 1950 to 5.7 million kW in 1960-61. Impressive as this increase was, it fell substantially short of the target of 6.9 million kW. The shortfall is mainly due to foreign exchange difficulties that arose during the early years of the Second Plan and also delays in the execution of some of the major projects. Special attention was paid to extending electricity to rural areas as this was considered to be an important measure for developing and modernising the rural economy. The total number of towns and villages electrified went up from 3687 in 1950-51 to 23,000 in 1960-61.

### TRANSPORT AND COMMUNICATIONS

32. Considerable improvement and expansion of the country's transport system took place during the past decade the total public sector outlay was Rs. 1823 crores. The main task under the First Plan was the rehabilitation and replacement of rolling stock and fixed assets of the railways which had been subjected to severe strain on account of the War and the Partition. To meet the growing demands of the agricultural and industrial sectors, additional facilities were provided by increasing rolling stock and constructing new lines during the Second Plan. There was also substantial expansion in road transport, shipping and air services.

An idea of the development of the transport services during the last decade may be obtained from the following Table:

Table 9: Transport

item	unit	1950-51	1955-56	1960-61
<b>railways</b>				
new lines added . . . .	miles	..	380*	800*
rolling stock :				
locomotives . . . . .	ooo numbers	8.5	9.2	10.6
coaches . . . . .	ooo numbers	20.5	23.2	28.2
wagons . . . . .	ooo numbers	222.4	268.5	341.0
passenger miles . . . . .	billions	41.3	38.8	48.6
freight carried . . . . .	million tons	91.5	114.0	154.0
<b>roads</b>				
surfaced including national highways . . . . .	ooo miles	97.5	122.0	144.0
unsurfaced . . . . .	ooo miles	151.0	195.0	250.0
road transport commercial vehicles on road . . . . .	ooo numbers	116	166	210
shipping tonnage . . . . .	lakh GRT	3.9	4.8	9.0
major ports capacity . . . . .	million tons	20	25	37

33. The expansion of industrial and commercial activity had its impact on the demand for communication facilities. The number of postal articles handled increased by about 80 per cent and of trunk telephone calls by about fivefold between 1950-51 and 1960-61. The number of post offices increased from 36,000 to 77,000 and of telephones from 168,000 to 460,000. Appreciable progress was also achieved in broadcasting. Each language area was provided with one transmitting station and there were as many as 28 stations in 1960-61. A programme for the provision of community listening sets in rural areas was taken up. The number of radio licences increased by about fourfold during the period.

#### SOCIAL SERVICES

34. The development of the human resources of the country through the provision of facilities for education, health and social welfare is one of the major objectives of planned development. In the First as well as the Second Five Year Plans, considerable importance was attached to social services and altogether Rs. 1289 crores were spent for their development during the decade, but undoubtedly the needs to be met were much larger.

\*Relates to the quinquennium ending 1955-56 and 1960-61 respectively.

35. *Education.*—There was all-round development of education. The number of students in schools increased from 23·5 million in 1950-51 to as many as 43·5 million in 1960-61—an increase of 85 per cent. The proportion of children attending schools in the age group 6–11 increased from 42·6 per cent to 61·1 per cent and in the age group 11-14 from 12·7 per cent to 22·8 per cent. The number of primary schools increased from 210,000 to 342,000 while that of high and higher secondary schools from 7300 to 17,000. The number of universities increased from 27 to 46 and of colleges (excluding intermediate colleges) from 542 to 1050.

36. Special emphasis was placed on developing facilities for technical education which is the very basis of industrial development. Facilities in existing institutions were expanded and improved and 51 new degree colleges and 110 polytechnics were opened during the last ten years. The total intake of students in these institutions increased from 10,000 in 1950-51 to 39,400 in 1960-61. The outturn of engineering graduates increased by about three times and that of diploma holders expanded more than threefold. Technical training facilities were provided in a number of industrial establishments in the public sector, particularly, in the steel and electrical plants. Special training facilities were also provided for various small scale industries. The annual intake of agriculture and veterinary colleges increased about fourfold.

37. *Scientific research.*—The promotion of scientific and technological research was given a high priority and a large number of new research institutions was established. These include 20 national laboratories and 3 regional research centres. Notable progress was made in basic and applied research in nuclear science and the peaceful uses of atomic energy, and a strong scientific and technical organisation was built up, which enabled the design and development of instruments and plants required for this work without foreign technical consultancy. The research departments of universities were also strengthened considerably.

38. *Health.*—There was a considerable expansion of health services. A large number of new hospitals, dispensaries, health units and maternity and child welfare centres were opened and special programmes for water supply and sanitation, control of communicable diseases and expansion of training facilities were undertaken. In 1950-51, there were 8600 medical institutions with about 113,000 beds. In 1960-61, the number increased to 12,600 institutions with 185,600 beds. In addition, 2800 primary health centres were opened. The number of medical colleges increased from 30 to 57 and that of doctors in practice or in service increased from 56,000 to 70,000. The entire population was covered by the malaria eradication programme. As a result of all these measures, the average expectation of life at birth improved by about 10 years over the last decade.

39. Early in the First Plan, the promotion of family planning was adopted as a public policy and by 1960-61 there were 549 urban centres and 1100 rural centres engaged in family planning service. A number of non-official organisations engaged in family planning work were given special financial and technical assistance. The programme, however, is a most difficult one to carry out and raises problems of great complexity. Sustained and intensive efforts are required over a fairly long period before family planning can become a popular movement and a part of the accepted attitudes of the people generally.

40. *Housing*.—As a result of the growth of population as also accelerated rate of urbanisation and industrial development, the housing problem became increasingly difficult. Certain measures were taken for slum clearance and improvement and for providing housing facilities for industrial workers and low-income groups. A small beginning was also made to deal with the problem of rural housing. However, the resources that could be spared for this purpose were small compared to the magnitude of the problem. The impact so far has been negligible and the problem of housing, especially in urban areas, is causing concern.

41. *Welfare of backward classes*.—Special welfare programmes were undertaken for scheduled tribes, Harijans and other backward classes. An area of 3.6 million acres of land was allotted to members of scheduled castes and scheduled tribes and another 2.6 million acres allotted to other backward classes during the period. About 68,000 post-matric scholarships were awarded to students of these classes. Members of these classes who faced special difficulties were helped, through financial assistance, educational facilities and employment opportunities, to improve their social and economic position and get fully integrated with the rest of the community.

42. *Rehabilitation*.—After Partition about 8.9 million displaced persons migrated into India, 4.7 million from West Pakistan and the rest from East Pakistan. Their relief and rehabilitation was a major undertaking during the First and Second Plans. Outlay on rehabilitation before the First Plan amounted to about Rs. 71 crores. The total expenditure on rehabilitation under the two Plans amounted to about Rs. 168 crores. Of this about Rs. 71 crores was incurred on housing, Rs. 31 crores on education and vocational training, Rs. 29 crores on rural loans for agricultural purposes and Rs. 11 crores on urban loans for small industries, trade and business and the balance on miscellaneous schemes. A large number of townships and colonies was established by Government for settling displaced persons and over 7 lakhs of residential units were constructed either by Government or by the displaced persons with Government assistance. Development of the Dandakaranya area for the re-settlement of displaced agriculturist families from East Pakistan was also initiated during the Second Plan period.

43. *Employment.*—During the ten years 1951-61, population increased by 77 million. This factor has accentuated the problem of unemployment. The additional employment opportunities created during the Second Plan are estimated at about 8 million, of which 6·5 million were outside agriculture. At the end of the Second Plan, the backlog of unemployment is estimated at about 9 million.

44. From the account given above, it will be seen that over the past ten years, the country has made considerable progress in every branch of national life. Inevitably, it has experienced, at the same time, stresses and strains; these are the growth pains of an economy struggling to find its way out of deep-rooted poverty and the economic stagnation of decades. In every direction new ground has been broken and valuable experience gained. Doubtless, there have been failures and errors that might have been avoided. There are many weaknesses in the economic and social structure that still persist. The country's potential for development is far from being realised. Yet, all these are part of an inspiring period in the nation's history—a story of continuous endeavour reaching into the far corners of the land and drawing within its fold all sections of the people.

## CHAPTER IV

### APPROACH TO THE THIRD FIVE YEAR PLAN

In its scope and emphasis, each Five Year Plan embodies an assessment of the current economic and social situation and of the progress of the economy over a period of years and, at the same time, it seeks to relate the next phase of development to the country's basic social objectives and the perspective of long-term economic growth. These latter have been set out in Chapters I and II. In drawing up the Third Plan the principal aims have been the following:

- (1) to secure an increase in national income of over 5 per cent per annum, the pattern of investment being designed also to sustain this rate of growth during subsequent Plan periods;
- (2) to achieve self-sufficiency in foodgrains and increase agricultural production to meet the requirements of industry and exports;
- (3) to expand basic industries like steel, chemicals industries, fuel and power and establish machine-building capacity, so that the requirements of further industrialisation can be met within a period of ten years or so mainly from the country's own resources;
- (4) to utilise to the fullest possible extent the manpower resources of the country and to ensure a substantial expansion in employment opportunities; and
- (5) to establish progressively greater equality of opportunity and to bring about reduction in disparities in income and wealth and a more even distribution of economic power.

2. The period of the Third Plan represents the first stage of a decade or more of intensive development leading to a self-reliant and self-generating economy. As a result of progress achieved during the First and the Second Plan, the foundations for rapid economic growth have been laid. India's economy is now much larger in size and in the range of its operations and has become both more dynamic and more complex. In all directions there are large and growing demands to be met. Considerable investments have also to be made in projects and programmes whose output will be available only in the course of the Fourth Plan. Thus, the Third Plan will call for the maximum rate of investment that can be achieved.

The general pattern of development followed in the Third Plan naturally flows, in large part, from the basic approach and experience of the Second Plan. However, in some important respects it represents a new view of the problems of development and calls both for more concentrated effort and a greater sense of urgency. In particular, the Third Plan will be directed towards strengthening the agricultural economy, developing industry, power and transport and hastening the process of social and technological change, achieving marked progress towards the goal of opportunity and the socialist pattern of society, and providing employment for the entire addition to the labour force. Inevitably, a development with these aims will make far reaching demands on resources. It is essential that the burdens of development during the Third Plan should be equitably distributed and, at each stage, the economic, fiscal and other policies adopted should bring about improvement in the welfare and living standards of the bulk of the people.

In the scheme of development during the Third Plan the first and necessarily belongs to agriculture. Experience in the first two plans and especially in the Second, has shown that the rate of growth of agricultural production is one of the main limiting factors in the development of the Indian economy. Agricultural production has, therefore, been increased to the largest extent feasible, and adequate resources must be provided under the Third Plan for realising the agricultural programme. The rural economy has to be diversified and the proportion of the population dependent on agriculture gradually diminished. These are essential aims if the incomes and levels of living of the rural population are to rise steadily and to keep pace with incomes in other sectors. In formulating and in implementing programmes for the development of agriculture and the rural economy during the Third Plan, the first consideration is that whatever is physically practicable should be financially possible, and the potential of each area should be exploited to the utmost extent possible.

In the establishment of democratic institutions at the district, block and village levels, responsibility and initiative in economic and social development in rural areas will rest increasingly with popular organisations—with Zila Parishads, Panchayat Samitis and Village Panchayats and with cooperatives. In the pattern of rural development, cooperatives are to be organised on the basis of the village community as the primary unit. Cooperative farming, which is vital for agricultural progress, is in its essence a logical growth of cooperation and the nucleus of community development at the village level.

The Third Plan envisages concentrated effort in agriculture on a national scale, calling for the participation of millions of peasant families of agricultural workers in village production plans and in large scale programmes.



of irrigation, soil conservation, dry farming, afforestation and the development of local manurial resources. One of the main aims of the Plan, therefore, is to harness the manpower resources available in rural areas. This is to be achieved through the programmes of development for which the Plan provides, supplemented by extensive rural works programmes for utilising manpower resources in the villages, especially for increasing agricultural production.

5. In the Third Plan, as in the Second, the development of basic industries such as steel, fuel and power and machine-building and chemical industries is fundamental to rapid economic growth. These industries largely determine the pace at which the economy can become self-reliant and self-generating. Programmes for industrial development have been drawn up from the point of view of the needs and priorities of the economy as a whole, the public and the private sectors being considered together. However, while the private sector will have a large contribution to make, the role of the public sector in the development of the economy will become even more dominant. An expanding public sector, engaged specially in developing basic industries and producing large surpluses for development, will itself be one of the most important factors determining the rate at which the economy can grow. Moreover, the Third Plan will carry further the present efforts to build up small industries as a vital segment in the industrial structure by promoting greater integration between large scale and small scale industries, spreading the benefits of industrialisation to small towns and rural areas and introducing improved techniques in the traditional rural industries.

6. Considerable emphasis is being given in the Third Plan to the development of education and other social services. In a scheme of development which relies heavily on public understanding and response and on cooperation and voluntary effort, the significance of these programmes cannot be too greatly stressed. They are essential for ensuring a fair balance between economic and social development and, equally, for realising the economic aims of the Plan. Large technological changes and increases in productivity cannot be achieved without greatly strengthening the educational base of the community and improving living conditions. Some of the programmes included in the Plan for social services are directly linked with economic development, such as scientific research, technical education and the training of craftsmen, family planning, and the provision for housing and urban development. There are others which are indispensable on larger social considerations and, over a period, exert a powerful influence on the pace of economic progress, such as the expansion of facilities for education, control of diseases, development of health and medical services, award of scholarships, supply of drinking water in villages and towns, and the provision of welfare services for the

less developed sections of the community. Within the limits of the resources available, these and other needs are being provided for in the Third Plan. However, it is obvious that in some directions, and more especially in education, in rural water supply and in family planning, as the Plan proceeds, every effort must be made to secure the largest measure of advance possible.

7. As has been explained earlier, until the economy has been strengthened considerably, it is difficult to provide work at an adequate level of remuneration to the entire labour force. A twofold approach has, therefore, to be adopted. In the first place, development programmes included in the Plan have to be worked in such a way as to yield the maximum employment of which they are capable. They have to be implemented in an integrated manner and adapted to the actual requirements of each area. Secondly, in many fields, where manpower can be used more intensively, development programmes under the Plan can be speeded up and enlarged to the extent necessary in the later stages of the Plan. Action along these lines will be required specially in areas with heavy pressure of population and in which there is considerable under-employment. It is at present reckoned that development programmes in the Plan may provide additional employment to the extent of about 14 million as against the increase in the labour force during the Third Plan of about 17 million. The balance is proposed to be taken care of through large-scale rural works programmes, village and small industries and other means.

8. In preparing the Third Plan the requirements of the economy as a whole and in different sectors have been considered carefully. The Plan takes into account the results of development over the past ten years, the increased expectations of the people, the implications of growth in population and of large-scale industrialisation, and the need to mobilise the domestic resources of the country to the greatest extent possible. A plan of smaller dimensions than those envisaged would prove altogether inadequate. For achieving a cumulative rate of growth of over 5 per cent per annum, it will be necessary to undertake net investment to the extent of more than 14 per cent of the national income as compared to the present level of about 11·5 per cent. This involves raising the rate of domestic savings from about 8·5 per cent at present to about 11·5 per cent by the end of the Third Plan. Domestic resources will need to be supplemented in substantial measure by external assistance, primarily to finance the import of vital capital goods which cannot be immediately produced within the country and to provide a measure of support to the balance of payments. Dependence at this stage of development on external resources serves to emphasise the importance of policies and measures for import substitution and for increasing export earnings during the Third Plan.

9. In the scheme of production for the Third Plan care has been taken to provide for adequate supplies of foodgrains and other consumer goods. Nevertheless, it is inevitable that from time to time inflationary pressures may emerge. The Plan, therefore, postulates a price policy which will ensure that the movements of relative prices are in keeping with its priorities and targets and that the prices of essential goods which enter into the consumption of low income groups do not rise unduly. It will also be essential to restrain the consumption of relatively non-essential goods and services. Along with this, in planning the pattern of production, care must be taken to avoid the use of the limited resources available in the production of relatively non-essential goods and services. These measures are important not only for securing rapid development under conditions of economic stability but are also necessary for the mobilisation of the domestic resources and the foreign exchange needed for the successful implementation of the Third Plan. The extent to which the resources required for the Plan can be raised is in no small degree dependent on the manner in which it is implemented, especially the efficiency with which various projects are constructed and operated, the extent to which the available capacities in agriculture, industry, power, transport and elsewhere are utilised, and the intensive use of the country's manpower resources. The financial requirements of the Third Plan as described in the following Chapter are distinctly higher than the estimates of resources at present available. To be able to force the pace of development, there must be a continuing effort to mobilise financial resources on a large scale. Recent studies suggest that in several directions this larger effort is within the range of practical achievement.

10. In the Third Plan stress is being placed on the careful phasing of projects in relation to one another. At each stage in development, there should be a series of projects under execution, ensuring continuity both in planning and in the flow of benefits. Some measure of balance must be preserved between projects with long gestation periods and those which can be completed over relatively short periods. In phasing projects, there has to be strict regard to the requirements of physical planning, especially planning of manpower and the provision of materials and ancillary services including power and transport. In the related sectors of industry, transport and power, during each phase of development, close coordination in planning and execution is essential not only for new projects, but equally, for achieving rising levels of production from the existing plants. The programme of industry, along with power, transport, scientific research and technical education, included in the Third Plan, is conceived of as a continuous and integrated whole. Every effort has, therefore, to be made to initiate and complete within the shortest possible time schemes which will help to raise the potential for growth within the economy. Large projects take considerable periods, but in the early

stages the investments required for them are of relatively small magnitude. By speeding up preparatory work on them, invaluable time can be gained.

11. In the Third Plan, as in the Second, the plans of States have great importance for the rapid development of the national economy. Important national objectives, as in agriculture, education and other social services, and in the utilisation of rural manpower, can be realised only in the measure in which the plans of States are carried out successfully. They bear closely on the welfare of the people as a whole and, to a large extent, it is through them that a rise in the levels of living for the weaker sections of the community and for the less developed areas can be secured. With the development of large scale industries, specially of basic and heavy industries, State plans have to provide on a large scale for the development of power and technical education, for schemes of housing and urban development, and for measures to achieve closer integration of the rural with the industrial economy. In formulating the plans of States under the Third Plan and determining their size and patterns, to the extent possible, these considerations have been kept in view.

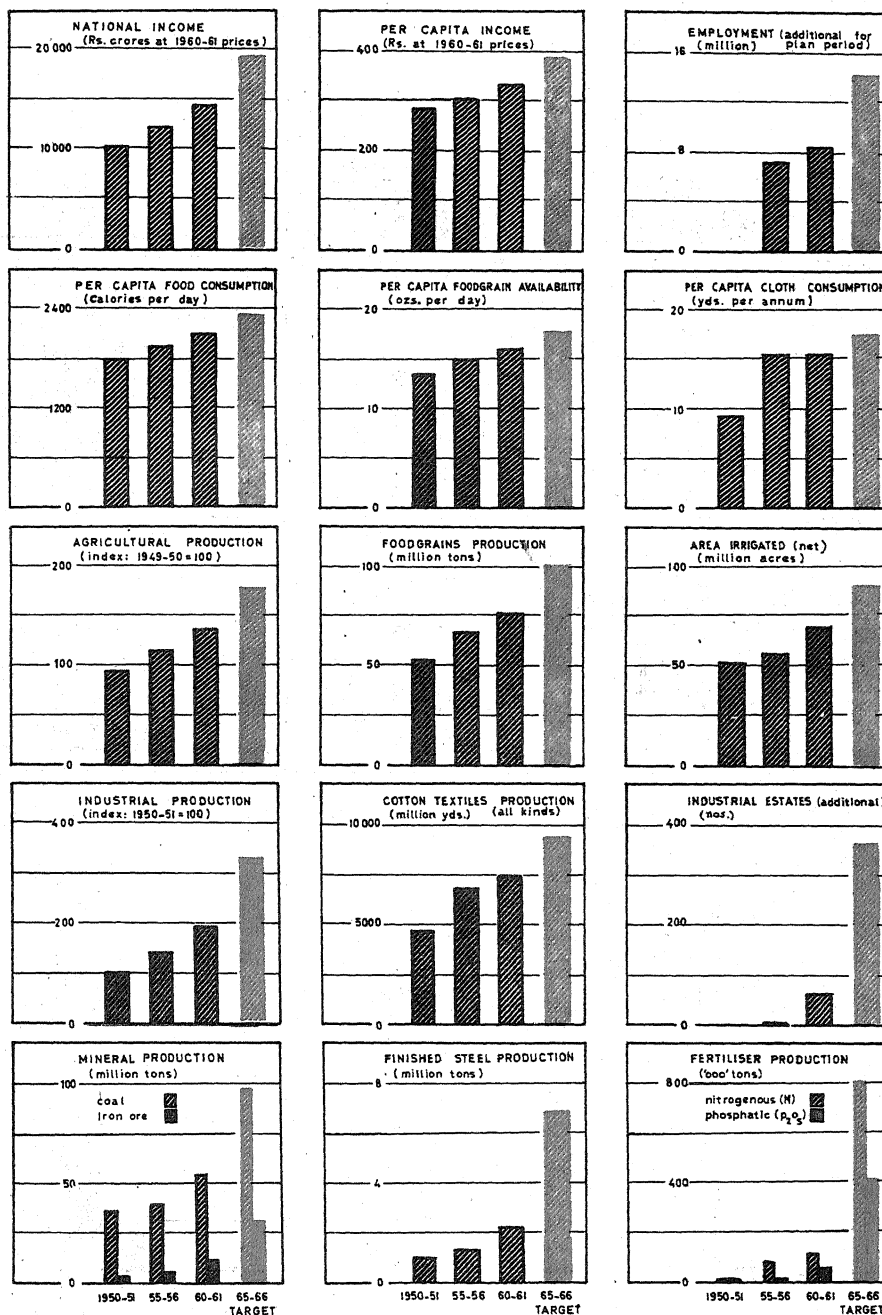
12. To a greater extent than in the past, during the Third Plan, the direction and management of the Indian economy will call for improved methods and machinery for planning and execution, better statistical and economic intelligence, greater appreciation of technological and other developments occurring in different fields, fuller knowledge of the country's potential resources and, generally, for more systematic analysis and research. For every large programme and every major project or group of allied projects, there is need for careful evaluation of progress. This is being provided for under the Third Plan. Along with it, over a wide area, improvements in statistical data must be secured, notably in the estimation of national income and of capital formation, in the statistics of agricultural and industrial production, distribution and employment, in vital statistics, and in the collection and study of data relating to consumer expenditure, costs of living and the distribution of income.

13. The programme of economic and social studies undertaken during the first two Plans, the results of which are now becoming available, was devoted in the main to investigations of conditions of migration and employment in cities, studies of land reform and farm management, surveys of cottage and small scale industries and evaluation of irrigation benefits, and to selected problems of social welfare and administration. To a limited extent, analytical studies on the broader aspects of the economy were also taken in hand. In the programme of research for the Third Plan, to be undertaken through universities and leading research institutions as well as by the Planning Commission and other agencies, a great deal of attention will need to be given to problems such as efficiency of investment in different sectors of the economy, pricing policies

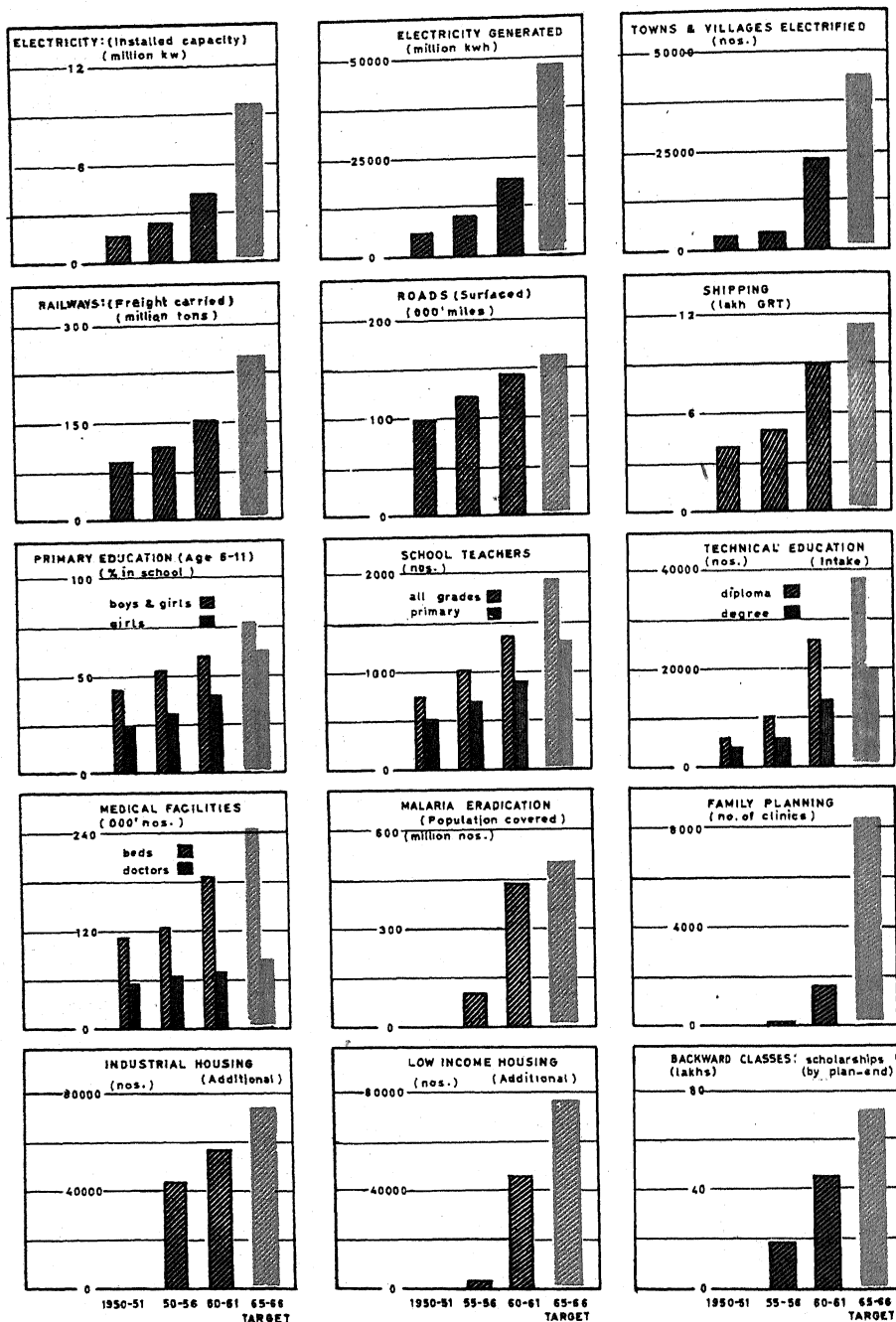
and techniques, foreign trade and the balance of payments, problems of organisation and administration in relation to planned development, problems of social change and social conflict, studies bearing on regional and urban development, and investigations into the working of programmes for land reform, cooperation, community development, rural electrification, small scale industries and others. Many of these studies will be of considerable value in the preparation of plans for long-term development. They will also greatly facilitate the realisation of the specific aims of the Third Plan and provide useful criteria for evaluating performance and sifting the lessons to be drawn from experience in different parts of the country.

14. In the course of the Third Plan, the nation sets out to achieve as much in five years as has been realised in the ten years of the First and the Second Plan. The task is large in magnitude, urgent, and of great significance for the present and the future. Its administrative implications are vast and call for the highest standards of efficiency attainable in every field of activity. Effective implementation requires the maximum mobilisation of resources, adaptation to changing needs, co-ordination and concentration of resources at every vital point, ability to anticipate difficulties and problems, readiness to seize upon favourable opportunities for growth and, above all, men of skill and knowledge and organisations attuned to the objectives of the Plan. A plan of development, however elaborate or precise, is at best a framework which sets broad patterns for action, for participation in the national endeavour, on the part of millions of people living and working under conditions of marked diversity. Its success rests on a variety of factors—on widespread understanding of the challenge and the burdens of development, on the release of new productive forces and increasing application of modern science and technology, on changes in outlook and motivation and, finally, on a climate of confidence that rapid economic development is the means both to social justice and to wider economic opportunity. These are among the principal conditions for achieving fully the advance envisaged in the Third Five Year Plan.

# SELECTED FIRST AND SECOND PLAN ACHIEVEMENTS AND THIRD PLAN TARGETS



# SELECTED FIRST AND SECOND PLAN ACHIEVEMENTS AND THIRD PLAN TARGETS



## CHAPTER V

### THE THIRD PLAN IN OUTLINE

#### PHYSICAL TARGETS

THE principal aims of the Third Five Year Plan have been set out in the preceding Chapter. If these aims are to be achieved, it is essential that a certain minimum development should take place in different sectors of the economy during the next five-year period. The physical targets of the Third Plan have been formulated keeping these minimum needs in view. A detailed list of these targets is given in Annexure I to this Chapter. It is estimated that national income should go up by about 30 per cent and per capita income by about 17 per cent over the next five years. A few selected targets are included in the Table below with the object of giving a synoptic view of the Plan:

Table 1: Selected targets

item	unit	1960-61	1965-66	percentage increase in 1965-66 over 1960-61
index number of agricultural production . . . . .	1949-50 = 100	135	176	30
foodgrains production . . . . .	million tons	76	100	32
nitrogenous fertilisers consumed . . . . .	000 tons of N	230	1000	335
area irrigated (net total) . . . . .	million acres	70	90	29
cooperative movement :				
advances to farmers . . . . .	Rs. crores <sup>1</sup>	200	530	165
index number of industrial production . . . . .	1950-51 = 100	194	329	70
production of:				
steel ingots . . . . .	million tons	3.5	9.2	163
aluminium . . . . .	000 tons	18.5	80	332
machine tools (graded) . . . . .	value in Rs. crores	5.5	30.0	445
sulphuric acid . . . . .	000 tons	363	1500	313
petroleum products . . . . .	million tons	5.7	9.9	70
cloth				
mill-made . . . . .	million yards	5127	5800	13
handloom, powerloom and khadi . . . . .	million yards	2349	3500	49
total . . . . .	million yards	7476	9300	24



item	unit	1960-61	1965-66	percentage- increase in 1965-66 over 1960-61
<b>minerals:</b>				
iron ore . . . . .	million tons .	10.7	30.0	180.
coal . . . . .	million tons .	54.6	97.0	76.
exports . . . . .	Rs. crores .	645	850	32.
power: installed capacity . . . . .	million kW .	5.7	12.7	123
railways: freight carried . . . . .	million tons .	154	245	59.
road transport : commercial vehicles on road . . . . .	ooo numbers .	210	365	74
shipping : tonnage . . . . .	lakh GRT .	9.0	10.9	21.
<b>general education:</b>				
students in schools . . . . .	million numbers	43.5	63.9	47.
<b>technical education:</b>				
engineering and technology— degree level intake . . . . .	ooo numbers	13.9	19.1	37.
<b>health:</b>				
hospital beds . . . . .	ooo numbers .	186	240	29.
doctors practising . . . . .	ooo numbers .	70	81	16.
<b>consumption levels:</b>				
food . . . . .	calories per capita per day .	2100	2300	10.
cloth . . . . .	yards per capita per annum .	15.5	17.2	11.

## PHYSICAL PROGRAMMES

2. The increase in population, the growing expectations of the people and the urgent need for attaining the stage of self-sustained growth over the next two or three Plan periods make it essential that there should be every possible effort to achieve these targets during the next five years. In addition, certain measures must be taken during the Third Plan period itself in preparation for the Fourth Plan. The physical programmes included in the Third Plan have been formulated with both these objectives in view. The total cost of completing all these programmes exceeds Rs. 8000 crores for the public sector, and is estimated at Rs. 4100 crores\* for the private sector.

3. It is important that programmes for industrial development, including power, transport, technical education and scientific research, should proceed in a connected manner in accordance with an approved scheme of priorities so that, as the requisite foreign exchange and personnel become available, corresponding internal resources are also found and rapid progress is assured. In fields like agriculture, small industries and social services, where there is scope for attracting a great

\*This excludes the estimated transfer of Rs. 200 crores from the public to the private sector.

deal of local community effort and public participation and where imported supplies are not a limiting factor, the effort has to be related to the maximum physical capacity for implementation and should not fall below the minimum needs of the country. In fact, as the productive projects in the industrial and agricultural sectors are implemented and additional output becomes available, it should be possible to raise additional resources for expanding the scope of some of the projects which have large employment potential but do not require much foreign exchange outlay.

4. These considerations suggest that the physical programmes to be accepted for implementation over the five-year period should not be altogether limited by the financial resources immediately in sight at the stage of drawing up the Plan, although the outlays have necessarily to be regulated with reference to the resources actually mobilised from year to year. Past experience has shown that if a Plan for a five-year period is prepared only in terms of the financial resources in sight at the time of the preparation of the Plan, the fullest use cannot be made of all the opportunities which present themselves in the course of the implementation of the Plan.

#### FINANCIAL PROVISIONS

5. The estimate of financial resources has been placed for the present at Rs. 7500 crores. Recent studies, however, indicate that there are possibilities of raising additional resources if certain measures are taken for mobilising the savings of the country. In fact, to the extent that the physical targets included in the Plan are achieved, the prospects of raising additional financial resources will correspondingly improve. As a result of the support which India's development plans are receiving from friendly countries and from the International Bank of Reconstruction and Development and other international agencies, there is reason to hope that the shortage of foreign exchange may not be a major impediment in the realisation of the goals of the Third Plan. On the other hand, as the Plan proceeds, it may be found that some of the projects approved for implementation may not be completed within the Third Plan period, and a part of the investment may in fact be deferred to the early phase of the Fourth Plan. A considerable proportion of the projects, especially in industry and mining, have relatively long gestation periods and frequently involve difficult technical problems. Delays in designing and setting up industrial plants or undertaking complementary development or in securing equipment and components may well extend the period of completion of some of these projects beyond the Third Plan. Whatever the consequential adjustments, special care would, however, be taken to ensure that projects which are essential for achieving the key targets included in the Third Plan are completed in time.

6. The following Table gives the distribution of the financial outlay of Rs. 7500 crores under major heads:

Table 2: Financial provisions

head	Second Plan		(Rs. crores) Third Plan—financial provisions				
	total expenditure	percentage	States	Union Territories	Centre	total	percentage
agriculture and community development	530	11	919	24	125	1068	14
major and medium irrigation . . . .	420	9	630	2	18	650	9
power . . . . .	445	10	880	23	109	1012	13
village and small industries . . . .	175	4	137	4	123	264	4
organised industry and minerals . .	900	20	70	neg	1450	1520	20
transport and communications .	1300	28	226	35	1225	1486	20
social services and miscellaneous .	830	18	863	87	350	1300	17
inventories . . . .	—	—	—	—	200	200	3
total . . . . .	4600	100	3725@	175	3600	7500	100

Out of the total financial outlay of Rs. 7500 crores in the public sector, investment\* is estimated at Rs. 6300 crores and current outlay,\*\* representing expenditure on staff, subsidies, etc. at Rs. 1200 crores. These figures include only that part of the expenditure on development programmes of local bodies like municipalities, panchayats, etc. as is financed by Central and State Governments as part of their Plan expenditure. They do not include the contributions which these local bodies make out of their own resources. Similarly they do not include the contributions in cash or in kind which are made by the local people in projects of a local character involving local participation. Expenditure on development services and institutions established upto the end of the Second Plan, estimated at about Rs. 3000 crores for the five-year period, falls outside the Third Plan outlays shown in Table 2.

7. In the Table above, the financial provision for the States is shown as Rs. 3725 crores. As against this the total cost of the physical programmes included in State plans amounts to Rs. 3847 crores. The revenues of States have, however, recently shown marked improvement. It is considered that given the necessary additional taxation, States should find

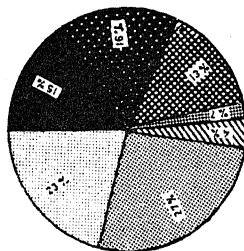
@ This is subject to the observation made in the following paragraph and paragraph 27 of Chapter VI.

\*Investment is expenditure on the creation of physical assets (e.g. buildings, plant and equipment), including expenditure on personnel required for putting up these assets. The expression corresponds broadly to expenditure on capital account.

\*\*Current outlay corresponds broadly to expenditure on revenue account on Plan schemes; it is expenditure other than that classified as 'investment'.

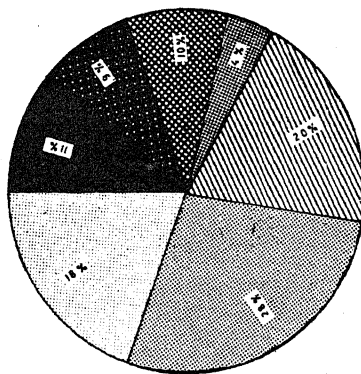
# DISTRIBUTION OF PLAN OUTLAYS IN THE PUBLIC SECTOR

FIRST PLAN



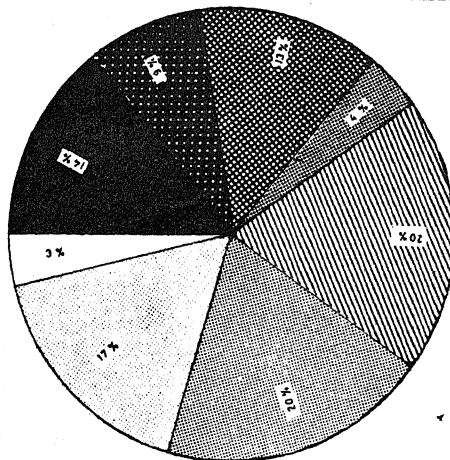
Rs. 1960 crores

SECOND PLAN



Rs. 4800 crores

THIRD PLAN



Rs. 7500 crores

	FIRST PLAN R S.	SECOND PLAN C R O R E S	THIRD PLAN C R O R E S
AGRICULTURE & COMMUNITY DEVELOPMENT	291	529	1069
IRRIGATION	310	420	650
POWER	260	445	1012
VILLAGE & SMALL INDUSTRIES	43	176	264
INDUSTRY & MINERALS	74	900	1520
TRANSPORT & COMMUNICATIONS	523	1300	1486
SOCIAL SERVICES & MISCELLANEOUS	459	30	1200
INVENTORIES			209



it possible to finance fully the physical programmes included in their plans. Thus the gap between physical programmes and financial resources, such as it may be, relates mainly to the Centre. In the programmes of the Central Government those dependent on external resources constitute a large proportion, for instance, industries, minerals, transport and communications. As foreign exchange becomes available, necessary steps will have to be taken to raise the requisite rupee resources.

8. As has been mentioned earlier, the Plan includes outlays not only by the public sector but also by the private sector. Investment by the private sector is estimated at Rs. 4100 crores. The break-up of the public and the private sector investment under major Plan heads is given below:

Table 3: Investment in Second and Third Plans

head	(Rs. crores)								
	Second Plan				Third Plan				per-centage
	public	private	total	per-centage	public	private	total	per-centage	
agriculture and community development . . . . .	210	625	835	12	660	800	1460	14	
major and medium irrigation . . . . .	420	*	420	6	650	*	650	6	
power . . . . .	445	40	485	7	1012	50	1062	10	
village and small industries . . . . .	90	175	265	4	150	275	425	4	
organised industry and minerals . . . . .	870	675	1545	23	1520	1050	2570	25	
transport and communications . . . . .	1275	135	1410	21	1486	250	1736	17	
social services and miscellaneous . . . . .	340	950	1290	19	622	1075	1697	16	
inventories . . . . .	—	500	500	8	200	600	800	8	
total . . . . .	3650	3100†	6750	100	6300	4100†	10400	100	

9. The foreign exchange requirement for an investment of Rs. 10,400 crores is estimated to be over Rs. 2030 crores. The level of investment, public and private, is expected to rise from about Rs. 1600 crores in the last year of the Second Plan to about Rs. 2600 crores at the end of the Third. Corresponding figures for the public sector alone are Rs. 800 crores and Rs. 1700 crores.

10. It will be seen from Table 3 that the Third Plan provides for an increase of about 54 per cent in total investment—70 per cent in public sector investment and 32 per cent in private sector investment.

\*Included under agriculture and community development.

†Excludes transfers from public to private sector.

The proportion of the public sector will be, however, higher to the extent that the public sector outlay is raised above the financial provision of Rs. 7500 crores, near to the physical Plan of over Rs. 8000 crores.

#### STATE PLANS

11. Out of the programmes included in the public sector of the Third Plan the plans of States account for Rs. 3847 crores and of Union Territories for Rs. 175 crores. The remaining programmes fall within the plans of the Central Ministries. Details have been given in Annexure II to this Chapter. Provisions in the States and at the Centre have been made on the principle that generally development schemes to be implemented by State Governments should form part of the State plans and only certain limited categories of schemes should be shown in the plans of Central Ministries as being 'sponsored' by the Central Government. In this way, an attempt has been made to broaden further the scope of the plans of States and facilitate the integrated working of their development programmes.

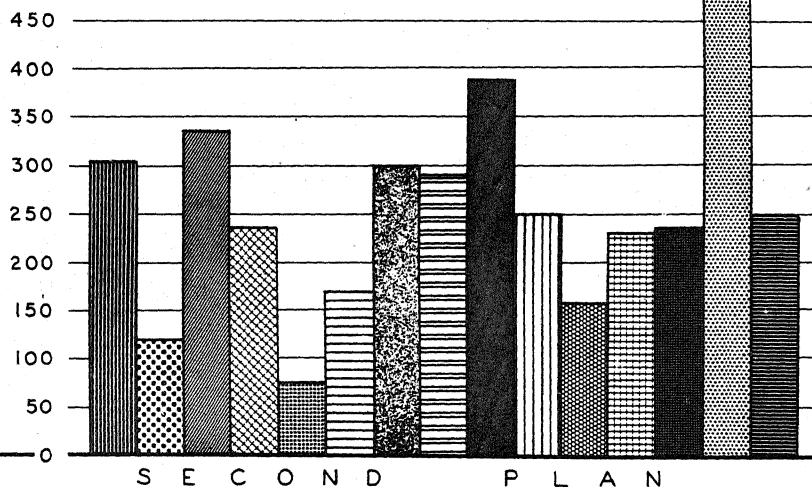
12. In determining the plan of each State consideration was given to its needs, problems, past progress and lags in development, likely contribution to the achievement of the major national targets, potential for growth and the contribution in resources which the State could make towards its development programmes. In assessing needs and problems, such factors as population, area, levels of income and expenditure, availability of certain services, e.g. roads, schools, hospitals, extent of commitments carried over from the Second Plan, commitments on account of large projects or special programmes and the state of technical and administrative services available were taken into account. Care was also taken to see that States whose resources were unavoidably small did not have to limit development to a scale which was altogether insufficient, merely because of paucity of resources. At the same time States which were able to make a larger effort in mobilising their own resources could undertake development on an appropriate scale. The break-up of Rs. 4022 crores, which is the total of all programmes included in the plans of States and Union Territories, together with comparable figures for the First and Second Plans is given Statewise in Annexure III to this Chapter. A detailed break-up by States and by heads of developments is given in Appendix B at the end of the Report.

13. The broad indications of the physical programmes and the financial provisions as indicated above give a measure of the overall effort and the relative emphasis on different sectors envisaged in the Plan. Within this general framework the Plan comprises a number of concrete programmes of development, details of which have been given in the

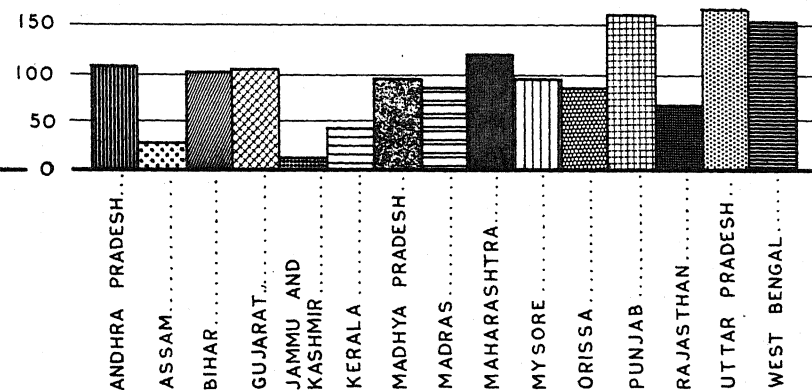
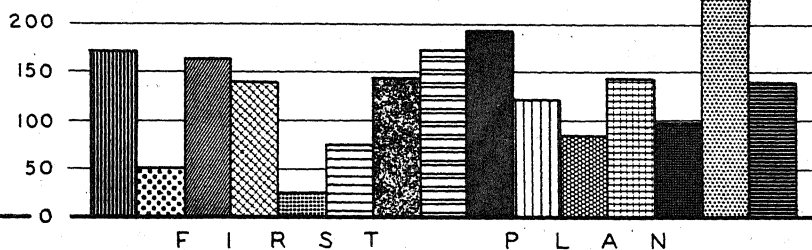
# STATES: PLAN OUTLAYS

(RS. CRORES)

T H I R D P L A N



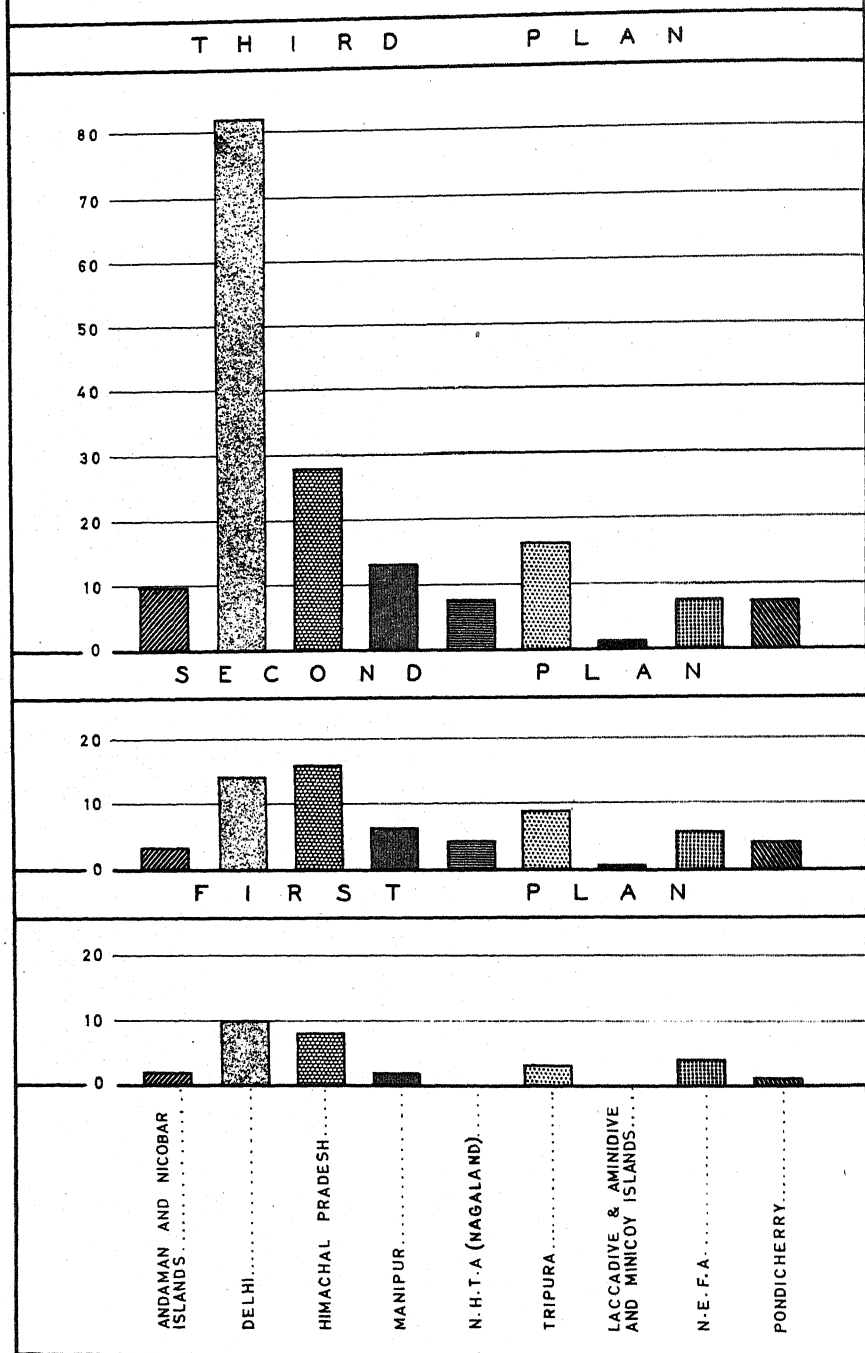
F I R S T P L A N





# UNION TERRITORIES: PLAN OUTLAYS

(RS. CRORES)



subsequent Chapters of this Report. A brief account of these programmes is, however, given in the following paragraphs.

### AGRICULTURE

14. Programmes for agriculture, irrigation and community development included in the Third Plan entail a total outlay of Rs. 1718 crores as compared to estimated expenditure of Rs. 950 crores in the Second Plan. These programmes aim at nearly doubling the rate of growth of agricultural production over the next five years. Production of foodgrains is expected to rise by 30 per cent and of other crops by 31 per cent as shown in the following Table:

Table 4: Index number of agricultural production

(1949-50=100)

group	1960-61	1965-66	percentage increase in 1965-66 over 1960-61
all crops . . . . .	135	176	30
foodgrains . . . . .	132	171	30
other crops . . . . .	142	186	31

15. To achieve this high rate of growth, intensive efforts are to be made in several directions. First, a large programme of irrigation, comprising major, medium and minor irrigation schemes, is to be undertaken. This will extend irrigation to about 20 million acres, raising the net irrigated area to about 90 million acres. Second, dry farming techniques are to be introduced on about 22 million acres and soil conservation measures over an area of about 11 million acres. Third, the consumption of fertilisers is to be stepped up—a fivefold increase being aimed at in nitrogenous fertilisers from 230,000 tons (in terms of N) to one million tons, and a sixfold increase in phosphatic fertilisers from 70,000 tons (in terms of  $P_2O_5$ ) to 400,000 tons. The area under green manures is to be increased from 11.8 million acres to 41 million acres. Plant protection measures are to be undertaken over an additional area of 50 million acres. Fourth, special efforts will be made to introduce modern technology in rural areas through a large-scale programme for improved agricultural implements and machines. A comprehensive programme for agricultural implements has been prepared which includes establishment in every State of one centre for testing, designing, technical guidance and manufacturing implements of improved type; adequate arrangements for the supply of iron and steel to manufacturers; credit for supply, purchase and production of improved implements; and strengthening of agricultural engineering personnel in the States. Fifth,

the community development programme will be extended to the entire rural area by October, 1963, thus bringing technical assistance and supplies within the reach of all the farmers in the country. All villages will be served by panchayats and cooperatives. Through the introduction of democratic institutions at the district and block levels, responsibility and initiative for development are being transferred to the people of each area. Membership in service cooperatives is expected to increase to about 37 millions, that is about two-thirds of all agricultural families. Considerable expansion of cooperative credit is aimed at, the targets being about Rs. 530 crores of short and medium-term advances and Rs. 150 crores (loans outstanding) of long-term credit. The number of cooperative marketing societies will be increased from 1869 to 2470. Nearly 980 new storage godowns at mandi centres will be set up and 9200 smaller godowns will be established in the rural areas on a cooperative basis. Twenty five new cooperative sugar factories will be set up and greater attention will be paid to the establishment of cooperative processing units for rice, cotton, jute, groundnut, fruits, etc. There is also a programme for setting up 2200 primary consumers' stores and 50 wholesale stores on a cooperative basis. Efforts will be continued to popularise cooperative farming and 3200 cooperative farms will be organised as pilot experiments throughout the country. Sixth, selected districts which have particularly favourable irrigation facilities and assured rainfall will be put under an intensive agricultural development programme for stepping up agricultural production. To begin with, one such district has been selected in every State. This important new programme will bring to these areas a concentration of technical help, fertilisers, improved credit and other supplies to reach all farmers through village panchayats and cooperatives and help increase both production and marketable surplus of foodgrains substantially.

16. It is expected that as a result of these various measures the production of the major crops will go up as shown in the following Table:

Table 5: Production of major crops

crop	unit	1960-61	1965-66	percentage increase in 1965-66 over 1960-61
foodgrains . . .	million tons	76.0	100.0	32
oilseeds . . .	million tons	7.1	9.8	38
sugarcane* . . .	million tons	8.0	10.0	25
cotton . . .	million bales	5.1	7.0	37
jute . . .	million bales	4.0	6.2@	55

\*In terms of raw sugar or gur.

@Excludes mesta which may provide 1.3 million bales in 1965-66.

A substantial part of this increase is expected to be achieved through an improvement in the yield per acre. It is expected for example, that the average yield of rice during the Third Plan period will be 1030 lb per acre as compared to 807 lb in the Second Plan period.

17. With the achievement of these targets, the economy will become self-sufficient in the supply of foodgrains and per capita availability will go up from 16 oz per day in 1960-61 to 17.5 oz per day in 1965-66. The per capita consumption of cloth per annum will go up from 15.5 yards in 1960-61 to 17.2 yards in 1965-66. Production of subsidiary foods like fruits and vegetables, for which there is a growing demand in the country, will be given special emphasis and an attempt will be made to provide a more balanced diet than at present. Special measures will be taken to step up the production of commodities like tea, coffee, rubber, coconut, arecanut, tobacco, pepper, cardamom and lac, which are important for either earning or saving foreign exchange.

18. Large programmes for the improvement of animal husbandry, dairying, fisheries and forestry have also been included in the Third Plan. Of the key village blocks already established under the programme for intensive development of cattle, 55 will be expanded and 38 new blocks will be set up in important breeding tracts. The number of veterinary hospitals and dispensaries will be raised from 4000 to 8000 and the programme for eradication of rinderpest already initiated will be completed. The production of wool will be stepped up from 72 million lb to 90 million lb. The production of milk will be increased from 22 million tons to 25 million tons. New milk supply schemes will be taken up in 55 cities with a population exceeding one lakh each, 8 rural creameries, 4 milk product factories and 2 cheese factories will be set up. The production of fish will be stepped up from 1.4 million tons to 1.8 million tons; 4000 fishing boats will be mechanised and 35 large vessels will be added to the country's fishing fleet. Special emphasis will be given to the development of forestry—700,000 acres afforested with economic species, 600,000 acres of degraded forests rehabilitated and 1,200,000 acres developed as village forests. A country-wide pre-investment survey will be initiated with a view to assessing the potential for the development of large-scale timber and pulp-based industries.

#### INDUSTRIES

19. Of basic importance in the Third Plan is the programme for the expansion of industries, especially capital and producer goods industries with special emphasis on machine-building and development of managerial skill, technical know-how and designing capacity. In this programme the public sector has been assigned a key role, but the

private sector is also expected to have an important part to play within the framework of the Plan. The share of the public sector in the net output of organised manufacturing industries is expected to increase from less than one-tenth in 1960-61 to about one-fourth in 1965-66, and the bulk of this will comprise capital and producer goods. For the development of industries and minerals, the Plan includes a programme costing Rs. 1882 crores but makes for the present a financial provision of Rs. 1520 crores in the public sector. In addition, the private sector is expected to provide about Rs. 1050 crores. The private sector is also expected to provide about Rs. 150 crores to meet the arrears of replacement and modernisation in certain pre-war industries.

20. The emphasis throughout the Third Plan is on the development of those industries which will help to make the economy self-sustaining, such as steel, machine-building and the manufacture of producer goods, and reduce as rapidly as possible the need for external assistance to purchase these goods and also permit a broadening of the export base. The production of consumer goods will also be expanded substantially, mainly in the private sector. It is expected that as a result of all these developments, industrial production will rise by nearly 70 per cent, but even more significant than this increase will be the development in the fields of iron and steel, machinery and chemicals, some idea of which may be obtained from the following Table:

Table 6: Index number of industrial production\*

(1950-51=100)

group	1960-61	1965-66	percentage increase in 1965-66 over 1960-61
general index . . . . .	194	329	70
cotton textiles . . . . .	133	157	18
iron and steel . . . . .	238	637	168
machinery (all types) . . . . .	503	1224	143
chemicals . . . . .	288	720	150

As has been mentioned earlier this index does not include a large number of new industries and is being revised.

21. The major industrial projects in the public sector included in the Third Plan are in the fields of metallurgy, industrial machinery, machine tools, fertilisers, basic chemicals and intermediates, essential drugs and petroleum refining. Overall capacity targets proposed under the iron and steel industry comprise 10.2 million tons of steel ingots and

\*This index is the same as the official index except that the comparison base has been changed from the calendar year 1951 to the financial year 1950-51 so as to facilitate measurement of growth over the Plan periods.

1.5 million tons of pig iron. These will be achieved by expanding the public sector steel plants at Rourkela, Bhilai and Durgapur to a target capacity of 5.9 million tons and also by setting up a fourth steel plant at Bokaro. There will be some expansion of capacity for steel in the private sector mainly through the installation of scrap-based electric furnaces which will augment the supplies of billets to re-rollers. About 200,000 tons of pig iron is also expected to be produced from low shaft furnaces proposed to be established on a decentralised basis in the private sector. The manufacture of tool, alloy and stainless steels has been given a high priority in the Third Plan and it is expected that a total production of 200,000 tons will be achieved by 1965-66. In the field of non-ferrous metals, the Plan aims at achieving a production target of 80,000 tons of aluminium and setting up the first zinc smelting plant in the country with a capacity of 15,000 tons. The production of copper is expected to increase from 8900 tons to 20,000 tons.

22. The most significant development during the Third Plan period will, however, be the rapid growth of machine-building and engineering industries. Foundry/forging capacity, which is crucial for machine-building purposes, will be established on a large scale in the public sector during the Third Plan. The heavy machinery plant being set up near Ranchi, on its expansion to a capacity of 80,000 tons of output per year, will be able to supply a large part of the equipment required for setting up a million-ton steel-making capacity every year. Three heavy electrical equipment projects are designed to ensure, from domestic resources, a wide range of electrical equipment sufficient to enable power generation to be increased at an annual rate of two million kW per year from 1971 onwards. In the field of machine tools, provision has been made for the expansion of the existing machine tool plants and the establishment of two new plants in the public sector. Substantial expansion in the production of machine tools in the private sector is also expected and the target for machine tools production has been put at Rs. 30 crores. The target for the automobile industry has been placed at 30,000 passenger cars and 60,000 commercial vehicles.

23. Production of inorganic fertilisers in terms of nitrogen will be stepped up from about 110,000 tons to 800,000 tons. A substantial increase in the production of phosphatic fertilisers is also proposed. A production target of 1.5 million tons has been set for sulphuric acid and of 340,000 tons for caustic soda. Provision has also been made for increasing the production of organic chemicals, plastics, dyestuffs and drugs. The target of production for cement has been fixed at 13 million tons and that of capacity for refining crude oil at about 11 million tons. Other important projects included in the Third Plan are the synthetic drugs project at Sanatnagar, antibiotics plant near Rishikesh and phyto-chemical project in Kerala. In the sphere of consumer goods industries,

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it is proposed to expand substantially the production capacity for cloth, paper, sugar, edible oils, watches, etc.

24. A short list of the important industrial targets included in the Third Plan is given below:

Table 7: Selected targets of industrial production

item	unit	1960-61	1965-66
steel ingots . . . . .	million tons	3.5	9.2
aluminium . . . . .	ooo tons	18.5	80
diesel engines . . . . .	ooo numbers	40	66
tractors . . . . .	ooo numbers	2	10
electric cables (ACSR conductors) . . . . .	ooo tons	22	44
nitrogenous fertilisers . . . . .	ooo tons of N	110	800
phosphatic fertilisers . . . . .	ooo tons of $P_2O_5$	55	400
sulphuric acid . . . . .	ooo tons	363	1500
caustic soda . . . . .	ooo tons	100	340
cement . . . . .	million tons	8.5	13
petroleum products . . . . .	million tons	5.7	9.9
machine tools (graded) . . . . .	value in Rs. lakhs	550	3000
ball and roller bearings . . . . .	million numbers	2.9	14
cotton textiles (mill-made) . . . . .	million yards	5127	5800
sugar@ . . . . .	million tons	3.0	3.5
paper and paper board . . . . .	ooo tons	350	700
bicycles (organised sector only) . . . . .	ooo numbers	1050	2000
sewing machines (organised sector only) . . . . .	ooo numbers	297	700
automobiles . . . . .	ooo numbers	53.5	100

#### MINERALS

25. The greater emphasis laid on the expansion of industry during the Third Plan calls for an intensified programme of mineral development. Some minerals have also a good export market and are important foreign exchange earners. Having regard to the programmes for power, railways, steel, cement and other industries which are important consumers of coal, the target for coal for the Third Plan has been fixed at 97 million tons. This target will require production capacity to be stepped up by 37 million tons over the target of 60 million tons set for the last year of the Second Plan. Of the additional production of 37 million tons, 20 million tons will come from the public sector and 17 million tons from the private sector. The amount of iron ore necessary to meet the proposed steel and pig iron targets is estimated at about 20 million tons. The iron ore required for export will amount to 10

@ Relates to crop year, November-October.

million tons. To meet this requirement, a capacity target of 32 million tons has been fixed for iron ore in the Third Plan. Provision has also been made for exploration and exploitation of new copper deposits for an annual production of 11,500 tons of electrolytic copper, exploitation of pyrites deposits in Bihar, development of diamond deposits in Madhya Pradesh, extraction and processing of uranium and intensive exploitation of manganese, bauxite, gypsum and limestone deposits.

26. A high priority has been given to exploration and exploitation of the mineral oil resources in the country. The Oil and Natural Gas Commission will operate on a larger scale with a view to proving new reserves and establishing additional production. The programme of exploration will cover most of the promising sedimentary areas in the country. In addition, foreign firms have been invited by Government to join the search for oil subject to mutually acceptable terms. Oil India, a joint venture of the Assam Oil Company and the Government of India, is expected to achieve an annual production of 2.75 million tons of crude oil. Government will be entering upon petroleum refining as a producer for the first time in 1962. With the completion of the Nunmati and Barauni refineries and the projected refinery in Gujarat, the share of the Government in the domestic refining capacity will be 47 per cent of the total.

#### VILLAGE AND SMALL INDUSTRIES

27. Along with large industries, village and small industries will be developed to provide employment and to increase production of consumer goods and some producer goods. Considerable progress has been already achieved in small scale industries, which combine the advantages of modern technology and the use of power with those of increased employment and greater opportunity for small entrepreneurs as well as for cooperatives. In the Third Plan they are expected to make still more rapid progress and to extend in larger measure to small towns and rural areas. A total provision of Rs. 264 crores is being made in the public sector for the programmes for village and small industries, as against about Rs. 175 crores spent in the Second Plan period. Additional funds will be available from other programmes—community development, rehabilitation of displaced persons, social welfare and welfare of backward classes. Investment in the private sector is estimated at about Rs. 275 crores. It is also proposed to offer Government guarantees for bank loans to small industrialists. Three hundred new industrial estates will be set up as against about 120 sanctioned during the Second Plan period. 'Rural industrial estates' will be set up in selected rural areas, where power, water supply and other essential facilities are available or can be readily provided. The Khadi and Village Industries Commission will give special attention to secure integrated rural development of selected compact areas or gram ekais, 3000 of which will be started during the Third Plan period. The



production of cloth by the handloom, powerloom and khadi industries is expected to increase from about 2350 million yards in 1960-61 to 3500 million yards in 1965-66 and of raw silk from 3.6 million lb to 5 million lb. Programmes for coir and handicrafts will be consolidated and enlarged.

### POWER

28. Power being the basis for the development of industries, both large and small, a high priority has been given to production of power in the Third Plan. The programmes for power development both for public and private sectors total Rs. 1089 crores. By the end of the Third Plan, generating capacity, including plants already commissioned and those under erection and testing, is expected to be of the order of 13.4 million kW, of which 12.7 million kW is expected to be in commercial operation as against 5.7 million kW at the end of the Second Plan. It is estimated that 45,000 million kWh of power will be generated during 1965-66 as against 19,850 million kWh during 1960-61. Transmission lines will be extended from 84,000 circuit miles in 1960-61 to 150,000 circuit miles in 1965-66. The number of towns and villages electrified will be increased from 23,000 in 1960-61 to 43,000 by 1965-66. It is expected that practically all towns and villages with population exceeding 5000 and half of those with population between 2000 and 5000 will receive the benefits of electricity. A nuclear power station of 0.3 million kW capacity will be set up to provide 0.15 million kW during the Third Plan period and the balance in the first year of the Fourth Plan. But bulk of the installed generating capacity aggregating to 7.4 million kW will be provided by the thermal plants and 5.1 million kW by hydro plants.

### TRANSPORT AND COMMUNICATIONS

29. The experience of the past few years has underlined the key role of transport and communications in economic development. The programmes under this head total Rs. 1655 crores while the financial provision is Rs. 1486 crores for the present. Although large investments were made in this sector under the previous two Plans, the Third Plan includes a substantial programme for its further development. The railway development programme has been formulated on the basis of an estimated increase of freight traffic from 154 million tons in 1960-61 to 245 million tons in 1965-66. Nearly 90 per cent of this additional traffic is expected to be on account of iron and steel, ores, coal, cement and railway materials. Provision has been made for, among others, the construction of 1200 miles of new lines, doubling of 1600 miles of single tracks and manufacturing of diesel and electric locomotives and certain other items, which are still being imported. The road programmes provide for the addition of about

25,000 miles of surfaced roads and also for improvement of the existing road systems, such as providing bridges and missing links and upgrading the existing roads. The road transport programme will be largely in the private sector. The number of commercial vehicles on road is expected to increase from 2·10 lakhs in 1960-61 to 3·65 lakhs in 1965-66. The freight traffic by road is expected to increase by 120 per cent over the next five years. The Plan also includes programmes for development of major and minor ports and for expansion of shipping, inland water transport, civil air transport, posts and telegraphs and broadcasting services. An idea of the important targets in the field of transport and communications included in the Third Plan may be obtained from the following Table:

Table 8: Transport and communications

item	unit	1960-61	1965-66
railways:			
new lines . . . . .	miles	800*	1200*
new double lines . . . . .	miles	1300*	1600*
freight carried . . . . .	million tons	154	245
roads and road transport:			
surfaced roads including national highways . . . . .	000 miles	144	169
vehicles on road:			
commercial . . . . .	000 numbers	210	365
passenger . . . . .	000 numbers	50	80
goods . . . . .	000 numbers	160	285
shipping:			
tonnage . . . . .	lakh GRT	9·0	10·9
ports:			
major ports—capacity . . . . .	million tons	37	49
communications:			
post offices . . . . .	000 numbers	77	94
telegraph offices . . . . .	000 numbers	6·5	8·5
telephone connections . . . . .	000 numbers	460	660

## SOCIAL SERVICES

30. *Scientific research.*—Scientific research, especially in fields having a close bearing on industrial and agricultural development, will be given special stimulus. New institutions for research in fields like petroleum technology and for the development and production of scientific instruments will be set up. Problems of utilisation and disposal of industrial and agricultural wastes will be given further attention during the Third Plan period. Provision will also be made for expanding facilities for

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\*Relates to five-year period ending in the year mentioned.

basic research in universities and technical institutions. The valuable work done towards the use of nuclear energy for the production of electrical power and the use of isotopes, in agriculture, biology, industry and medicine, will be strengthened and further expanded. The production section of the Electronics Division of the Atomic Energy Establishment is expected to fabricate instruments of the value of Rs. 8 crores during the Third Plan period. A major effort will be concentrated on the design and development of prototype nuclear power stations related to Indian conditions and the availability of local materials, so that during the Fourth Plan period the country will be entirely independent of foreign consultancy in the design and construction of large nuclear power stations. The possession of the world's largest deposits of thorium in high grade ore requires that research and development work should also be concentrated on the long range objective of developing thorium as a fuel for power generation.

31. *Technical education and training.*—Technical education is very closely associated with the programme of industrial and agricultural development of the country. It is estimated that the Third Plan will require a total of 151,000 trained engineers and the Fourth Plan as many as 200,000. There will be need also for about 810,000 skilled workers in engineering trades and about 460,000 in non-engineering trades during the Third Plan period. The requirement will be much larger during the Fourth Plan period. To meet this demand the intake capacity of engineering colleges will be increased from 13,860 to 19,140 and of polytechnics from 25,570 to 37,390. Part-time and correspondence courses in engineering and technology will be also introduced. The number of training institutions for craftsmen will be increased to 318 by 1965-66 and in-plant training and evening classes for employed industrial workers will be arranged. In order to provide the requisite number of instructors for skilled workers and craftsmen, the capacity of the four existing central training institutes will be doubled and three new institutes will be set up. The total out-turn of teachers from these institutes is expected to rise to about 8000. The intake capacity of agricultural colleges will be increased from 4600 to 6200 and of veterinary colleges from 1300 to 1460.

In addition to the engineering and technical personnel mentioned above, other categories of personnel required in large numbers include scientists, teachers, statisticians, administrators, managers and personnel for community development and cooperation and for programmes of social welfare and backward classes. For teachers of all categories and particularly for science teachers, where shortages have been felt during the Second Plan, more training facilities have been provided. About 59,000 additional personnel have to be trained in the Third Plan as

Block Development Officers; Extension Officers in agriculture, animal husbandry, industry, cooperation and panchayats; overseers; Social Education Organisers; Gram Sevaks and Gram Sevikas; etc. In the field of cooperation, the additional requirements of senior, intermediate and junior categories of personnel will be nearly 14,000. To work out the various programmes of welfare relating to women, children and the handicapped about 3000 workers and supervisors will be required. Voluntary organisations in the field of social welfare will require about 5000 trained personnel. For welfare of backward classes, the requirement of Block Development Officers, Extension Officers, Gram Sevaks, medical personnel and other staff will be over 14,000. A large number of statisticians will be required in the Third and Fourth Plans and they will be trained in the universities and other specialised institutions like the Indian Statistical Institute and the Institute of Agricultural Research Statistics. A large number of administrative and managerial personnel for industrial enterprises will also be required and training facilities for them will be provided in the institutions already established in the Second Plan and the new institutes of management to be established at Calcutta and Ahmedabad and the National Institute for Training in Industrial Engineering at Bombay.

32. *General education.*—The Third Plan envisages expansion of education facilities at all levels, but the outstanding feature of the Plan is the introduction of free and compulsory primary education in the country for the age group 6 to 11 years. Allowing for slower progress in the education of girls in certain backward areas, it is estimated that the proportion of pupils to the number of children will go up from 61.1 per cent to 76.4 per cent in the age group 6-11, from 22.8 per cent to 28.6 per cent in the age group 11-14 and 11.5 per cent to 15.6 per cent in the age group 14-17 during the Third Plan period. The total number of students in schools will go up from 43.5 million in 1960-61 to 63.9 million in 1965-66. The requirement of school teachers for the Third Plan has been assessed at 5.51 lakhs. Teachers' training facilities are, therefore, proposed to be expanded substantially. The number of students in universities is expected to go up from 9 lakhs in 1960-61 to 13 lakhs in 1965-66. One of the main tasks in the Third Plan will be to expand facilities for the teaching of science, the aim being to raise the proportion of science students to about 43 per cent. This is essential for meeting the increased demand in a number of different fields, e.g. science teachers for schools, students for engineering and other technical institutions and scientific personnel for industry.

33. A most important feature of the Third Plan will be the provision of a large number of scholarships to enable bright young students to complete their education in both secondary school and college stages.

The present provision for scholarships under this head is proposed to be augmented by about Rs. 10 crores under the Third Plan.

34. *Health and family planning.*—In the field of health services, the Third Plan aims at further extension of existing programmes relating to improvement of environmental sanitation, control of communicable diseases, public health services (including maternity and child welfare, health education and nutrition), family planning and training of medical and health personnel. The programme for eradication of malaria will be completed and nation-wide control campaigns will be initiated for smallpox and tuberculosis. Special measures will be taken to control cholera in the endemic areas. The number of primary health centres will be increased from 2800 to 5000 and of hospital beds from 185,600 to 240,100 during the Third Plan period. The number of practising doctors is expected to go up from 70,000 to 81,000 and of nurses from 27,000 to 45,000. Other important schemes included in the Plan relate to development of indigenous systems of medicine, health education, health insurance school health service, maternity and child welfare and nutrition.

35. In view of the sharp increase in the rate of population growth, a high priority has been given to family planning programmes in the Third Plan. These programmes provide for (a) education and motivation for family planning, (b) provision of services, (c) training, (d) supplies and (e) research. It is proposed to make full use of non-official organisations for ensuring diffusion of the knowledge and the practice of family planning. Family planning activities will be integrated with normal health services and family planning services including facilities for sterilisation will be provided through medical and health centres. The number of family planning centres will increase from 1649 to 8200.

36. *Village water supply and local development works.*—In the Draft Outline of the Third Plan, it was envisaged that the programme of local development works should aim at providing three principal amenities for rural areas, namely, (a) supply of drinking water, (b) roads linking each village to the nearest main road or railway station and (c) provision of village school buildings which might also serve as community centres and village libraries. In view of the overwhelming importance of providing satisfactory facilities for drinking water in the villages, it is proposed that there should be a concentration of effort on the village water supply programme. The other rural amenities should be taken care of through the community development programmes and through the rural works programmes to be undertaken for the fuller utilisation of manpower.

It is an important objective of the Third Plan that to as large an extent as possible, supplies of good drinking water should become available in most villages by the end of the Plan period. It is realised that

this is a difficult aim to achieve and will call both for intensive effort and for effective coordination between all the agencies concerned in carrying out the programme. Surveys of the extent of the problem of rural water supply are at present being undertaken in a number of States. On the basis of these surveys and with due regard to conditions prevailing in different areas, the resources provided for the village water supply programme are intended to be utilised in (a) backward areas, (b) areas not covered by the community development programme, (c) pre-extension blocks and (d) blocks which have completed their first and second stages in the community development programme.

37. The Third Plan also includes provision for adequate water supply for the rapidly increasing urban population. About 664 water supply and drainage schemes at an estimated cost of Rs. 112 crores were taken up in the Second Plan. Such of these schemes as have not yet been completed will be completed and some new urban schemes will also be taken up during the next five years.

38. *Housing*.—As a result of the growth of population and rapid urbanisation, the problem of housing has already become very serious and it is apprehended that it may become worse in future. It is obviously not possible to tackle this problem through public investment alone, although public investment has no doubt an important role to play in certain ways. While the Third Plan will expand considerably the measures which were taken during the previous two Plan periods, it will also supplement the investment that Government may be able to make by adopting appropriate policies regarding location and dispersal of industries, the preparation of master plans for important urban areas and co-ordinating the effort of the various agencies, both public and private, in a more effective manner. It includes proposals to set up housing boards at the Centre as well as in the States to enable a large number of lower and middle income people to build houses for themselves. The financial assistance for the housing of industrial workers and low income groups, slum clearance and improvement and land acquisition and development will be augmented. Town planning and urban development measures will be taken up in a number of cities. Rs. 10 crores have been provided in the Central Plan and another Rs. 10 crores in the West Bengal Plan for meeting some of the urgent needs of Calcutta which poses a special problem for the eastern region of the country. The programme for rural housing initiated under the Second Plan will be linked more closely with the community development programme and greater attention will be paid to the setting up of brick kilns, manufacture of building components, extension of areas for building new houses and improvement of housing conditions for agricultural workers.

39. *Social welfare.*—Among the various programmes formulated in the social welfare sector, highest priority has been assigned to the child welfare services. It has been decided that all welfare programmes should have a pronounced child welfare bias. The distinctive feature of the programmes now proposed is to place more emphasis on the preventive rather than the curative aspect of the service and to that extent child welfare service would be organised not only for the handicapped but also for the normal children. At the field level, an integrated approach would replace the dispersed services. To deal with juvenile delinquency, the State Governments will be assisted in setting up institutions. The practice of exploiting children for the purpose of begging will be severely dealt with. Highest emphasis will be given to the elimination of juvenile beggary in the programme for the eradication of beggary. This programme will be introduced initially in large cities, places of pilgrimage and tourist centres. Among the programmes to be organised for the benefit of women, strengthening of mahila mandals—local women's voluntary associations—will be given special emphasis. The measures taken in the Second Plan for the welfare of backward classes will be further stepped up. About 300 special development blocks for scheduled tribes will be set up and the programme for forest cooperative societies expanded. Attention will also be paid to the rehabilitation of displaced persons from Pakistan, especially to the development of Dandakaranya area for their settlement.

40. The programmes included under scientific research, education, health, housing, social welfare, etc. under the general head social services and miscellaneous total Rs. 1526 crores. As against this, the financial provision that it has been possible to make for the present is Rs. 1300 crores. Every endeavour will be made to fill up this gap as the Plan gets implemented.

#### EMPLOYMENT

41. The programmes included in the Third Plan are expected to provide employment opportunities for about 14 million people. In view of the fact that as a result of the sharp increase in population, the number of new entrants to the labour force during the Third Plan period will be as many as 17 million, there is a special need for increasing employment opportunities further. This will be partly done by expanding the programmes for village and small industries and agriculture to the extent possible. In addition, it is proposed to organise special works projects in rural areas on a mass scale. In its present preliminary formulation this programme is expected to provide work for an average of, say, 100 days in the year for about one lakh persons in the first year of the Third Plan, progressively rising to about 25 lakh persons in the last year. The

total cost of the programme over the five-year period is reckoned to be about Rs. 150 crores.

42. A special effort will be made to mobilise active public cooperation in various Plan programmes through voluntary organisations. These organisations will be encouraged to shift the emphasis from purely social welfare to socio-economic activities like construction work. Through the Lok Karya Kshetra programme, facilities will be provided for these organisations to participate effectively in both welfare and production programmes in the rural areas.

43. Compared to the needs of the country, the targets included in the Third Plan are by no means high and in fact some are definitely inadequate. There is, thus, urgent need to achieve these targets through most economical use of available resources, mobilisation of additional resources and increasing efficiency. This will be the constant endeavour of the Central and State Governments in the course of the implementation of the Third Plan and in that endeavour the correct balancing and phasing of projects and of outlays will require the greatest attention. It is possible that in spite of the best endeavours some of the projects will spill over into the Fourth Plan, but the utmost care must be taken to see that the projects which are essential for reaching the target of national income and for strengthening those sectors of the economy which are calculated to make it self-reliant and self-generating are completed in time.

#### NATIONAL INCOME

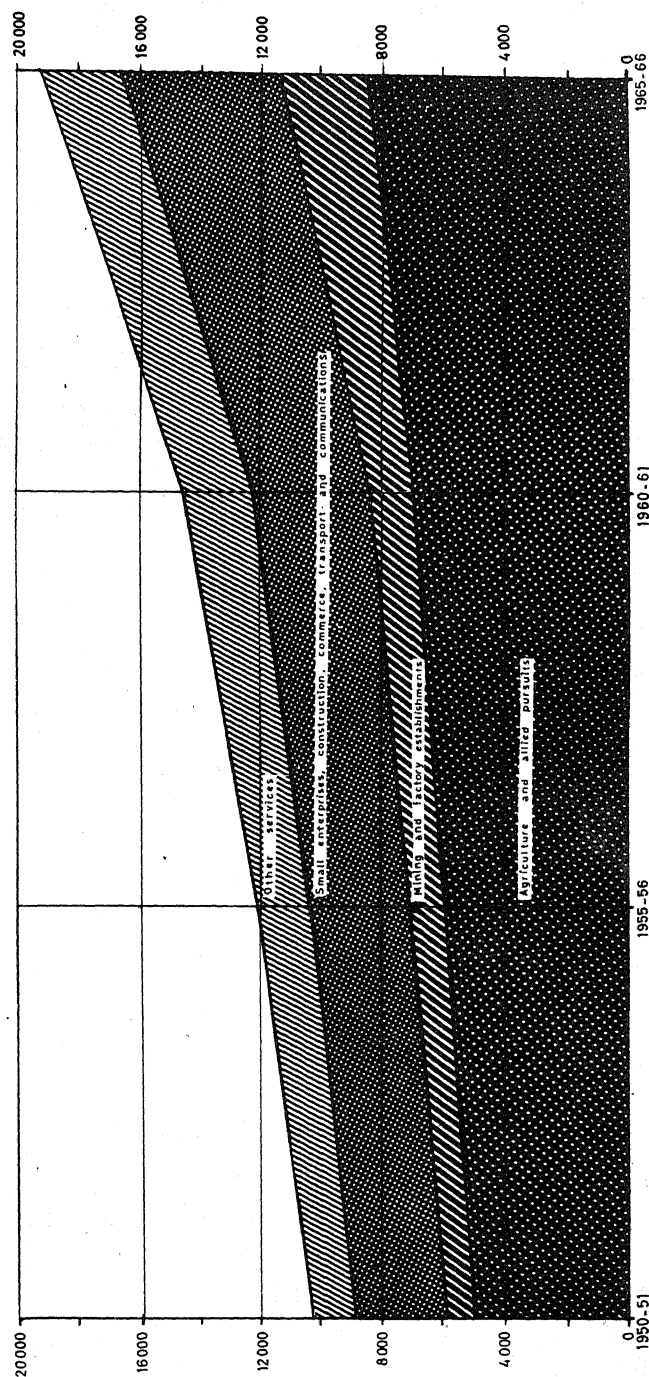
44. It has been estimated that if all the programmes included in the Plan can be completed in time, national income (at 1960-61 prices) will go up by about 34 per cent. Net output of agriculture and allied sectors will go up by nearly 25 per cent, of mining and factory establishments by about 82 per cent and of other sectors by about 32 per cent. The estimates for agriculture, mining and factory establishments are based largely on the targets of production included in the Plan. But, in the case of other sectors, only indirect estimation is possible and, in many cases, the basic data are quite inadequate. For realising the estimated increase of about 34 per cent in national income, as explained earlier, many difficult conditions have to be fulfilled. One of the most important of these relates to the total investment to be undertaken. As indicated in Annexure II of this Chapter, the physical programmes included in the Third Plan, specially under industry and transport, entail significantly larger investment than have been provided for within the present scheme of financial provisions and resources in the Plan. With greater effort in mobilising resources which is envisaged, it is hoped to reduce and, if possible, to eliminate this gap. Nevertheless, on present assump-



tions and in view of the various considerations already outlined, it is considered that over the Third Plan period national income should go up by about 30 per cent from about Rs. 14,500 crores (at 1960-61 prices) at the end of the Second Plan to about Rs. 19,000 crores at the end of the Third Plan. On the basis of the present estimates of population, per capita income should rise from about Rs. 330 in 1960-61 to about Rs. 385 at the end of the Third Plan.

# NET DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN

( RS. CRORES AT 1960-61 PRICES )





## ANNEXURE I

## Production and development: progress and targets

item	unit	1950-51	1955-56	1960-61 estimated	1965-66 targets	percentage increase in 1960-61 over 1950-51	percentage increase in 1965-66 over 1960-61
I	2	3	4	5	6	7	8
I. agriculture and community develop- ment							
I.1 agricultural production							
foodgrains	million tons	52.2(a)	65.8(a)	76.0	100.0	46	32
cotton	million bales	2.9	4.0	5.1	7.0	76	37
sugarcane-gur	million tons	5.6	6.0	8.0	10.0	43	25
oilseeds	million tons	5.1	5.6	7.1	9.8	39	38
jute	million bales	3.3	4.2	4.0	6.2(b)	21	55
tea	million lb	613	678	725	900	18	24
tobacco	ooo tons	257	298	300	325	17	8
fish	million tons	0.7	1.0	1.4	1.8	100	29
milk	million tons	17.1	19.3	22.0	25.3	29	15
wool	million lb	60	65	72	90	20	25
I.2 agricultural services							
area irrigated (net total)	million acres	51.5	56.2	70.0	90.0	36	29
land reclamation (additional area) (d)	million acres	..	2.7	1.2	3.6	..	200

(a) Estimates of production adjusted for changes in statistical coverage and methods of estimation upto 1956-57.  
 (b) Excludes mesta which may provide an additional 1.3 million bales in the Third Plan.  
 (d) Relates to five-year period.

item	unit	1950-51	1955-56	1960-61 estimated	1965-66 targets	percentage increase in 1960-61 over 1950-51	percentage increase in 1965-66 over 1960-61
I	2	3	4	5	6	7	8
soil conservation (additional area benefitted) (d)	million acres	..	0.7	2.0	11.0	..	450
nitrogenous fertilisers consumed	ooo tons of N	55	105	230	1000	318	335
phosphatic fertilisers consumed	ooo tons of P <sub>2</sub> O <sub>5</sub>	7	13	70	400	900	471
seed farms (d)	number	..	..	4000	4800	..	20
1.3 community development							
blocks	number	—	1069	3110	5223	..	68
villages covered	ooo numbers	—	106	368	550	..	49
population served	million numbers	—	69	204	359	..	76
1.4 cooperation							
primary agricultural credit societies	ooo numbers	105	160	210	230	100	10
short and medium term loans advanced	Rs. crores	22.9	49.6	200.0	530.0	773	165
2. power							
2.1 electricity							
installed capacity	million kW	2.3(c)	3.4(c)	5.7	12.7	148	123
generated	million kWh	6575(c)	10777(c)	19850	45000	202	127
2.2 towns and villages electrified	ooo numbers	3.7	7.4	23.0	43.0	523	87

## 3. minerals

iron ore . . . . .	million tons . . . . .	3.2	4.3	10.7	30.0	234	180
coal . . . . .	million tons . . . . .	32.3	38.4	54.6	97.0	69	76

## 4. large scale industries

## 4.1 metallurgical industries

steel ingots . . . . .	million tons . . . . .	1.4	1.7	3.5	9.2	150	163
finished steel . . . . .	million tons . . . . .	1.0	1.3	2.2	6.8	120	209
pig iron for sale . . . . .	million tons . . . . .	0.35	0.38	0.90	1.50	157	67
alloy, tool and special steels (finished)	ooo tons . . . . .	—	—	40	200	..	400
aluminium . . . . .	ooo tons . . . . .	3.7	7.3	18.5	80.0	400	332
copper (fire-refined and electrolytic)	ooo tons . . . . .	6.6	7.5	8.9	20.0	35	125

## 4.2 mechanical and electrical

## engineering industries

cement machinery . . . . .	value in Rs. lakhs . . . . .	—	34(c)	60	450	..	650
sugar machinery . . . . .	value in Rs. lakhs . . . . .	—	19	330	1000	..	203
industrial boilers . . . . .	value in Rs. lakhs . . . . .	—	—	40	2500	..	6150
machine tools (graded) . . . . .	value in Rs. lakhs . . . . .	34	78	550	3000	1518	445
ball and roller bearings . . . . .	million numbers . . . . .	0.1	0.9	2.9	14.0(c)	2800	383

(c) Relates to calendar year.

(d) Relates to five-year period.

(e) By working the capacity on three shifts.

item	unit	1950-51	1955-56	1960-61 estimated	1965-66 targets	percentage increase in 1960-61 over 1950-51	percentage increase in 1965-66 over 1960-61
I	2	3	4	5	6	7	8
diesel engines (stationary)	. . . . . 000 numbers	5.5	10.0	40.0	66.0	627	65
tractors	. . . . . number	—	—	2000	10000	..	400
electric motors (200 b.h.p. and below)	. . . . . 000 h.p.	100	272	700	2500(f)	600	257
electric transformers (33 kv and below)	. . . . . 000 kva	179	625	1200	3500	570	192
electric cables (ACSR) conductors	. . . . . 000 tons	1.7	8.7	22.0	44.0	1194	100
4.3 railway locomotives							
steam	. . . . . number	7	179	295	1175(d)	3214	..
diesel	. . . . . number	—	—	—	434(d)	..	..
electric	. . . . . number	—	—	—	232(d)	..	..
4.4 rubber manufactures							
automobile tyres	. . . . . million numbers	—	0.9	1.35	3.0	..	122
bicycle tyres	. . . . . million numbers	—	5.8	11.0	31.0	..	182
4.5 chemicals							
nitrogenous fertilisers	. . . . . 000 tons of N	9	79	110	800	1122	627
phosphatic fertilisers	. . . . . 000 tons of P <sub>2</sub> O <sub>5</sub>	9	12	55	400	511	627
sulphuric acid	. . . . . 000 tons	99	164	363	1500	267	313
soda ash	. . . . . 000 tons	45	81	145	450	222	210

caustic soda . . .	11	35	100	342	809	240
sulpha drugs . . .	—	83(c)	150	1000	..	567
D.D.T. . . . .	—	284	2800	2800	..	—
dyestuffs . . . .	—	4.0	11.5	18.0	..	57
4.6 other industries :						
sewing machines (organised sector only)	33	111	297	700	800	136
bicycles (organised sector only)	101	513	1050	2000	940	90
motor cycles and scooters . . .	—	1.5	18	50	..	178
automobiles . . . .	16.5	25.3	53.5	100.0	224	67
ship building . . . .	—	50(d)	20	50-60	..	150-200
cotton textiles (mill made)	3720	5102	5127	5800	38	13
rayon filament . . . .	0.4	16.0	47.0	140.0	11650	198
sugar (g) . . . . .	1.12	1.86	3.0	3.5	168	17
steel structural fabrications . .	—	90	150	1000	..	567
cement . . . . .	2.7	4.6	8.5	13.0	215	53
petroleum products . . . .	—	3.6	5.7	9.9	..	74
paper and paper board . . . .	114	187	350	700	207	100
plastics . . . . .	—	0.7	10.0	74.0	..	640

(c) Relates to calendar year.

(d) Relates to five-year period.

(f) 300 h.p. and below.

(g) Relates to crop year—November to October.



Item	unit	1950-51	1955-56	1960-61 estimated	1965-66 target	percentage increase in 1960-61 over 1950-51	percentage increase in 1965-66 over 1960-61
I	2	3	4	5	6	7	8
glass and glass-ware	: : 000 tons	92	125	225	440	145	96
industrial gases—oxygen	: : million cft	—	—	700	1650	..	136
5. village and small industries							
khadi							
traditional	: : million yards	7.3	28.9	48.0	3500	558	49
ambar	: : million yards	—	—	26.0	—	..	—
handloom	: : million yards	742	1471	1900	—	156	—
powerloom	: : million yards	148(c)	273(c)	375	—	153	—
sericulture	: : million tons	2.5(h)	3.2(c)	3.6(c)	5.0	44	43
6. transport and communications							
6.1 transport services							
railways: freight carried	: : million tons	91.5	114.0	154.0	245.0	68	59
roads : surfaced including national highways	: : 000 miles	97.5	122.0	144.0	169.0	48	17
road transport : commercial vehicles on road	: : 000 number	116	166	210	365	81	74
shipping	: : lakh GRT	3.9	4.8	9.0	10.9	130	21
major ports : handling capacity	: : million tons	20	25	37	49	85	32
6.2 communications							
post offices	: : 000 numbers	36	55	77	94	114	22
telegraph offices	: : 000 numbers	3.6	5.1	6.5	8.5	81	31
number of telephones	: : 000 numbers	168	280	460	660	174	43

# THE THIRD PLAN IN OUTLINE

83

## 7. education

### 7.1 general education

students in schools	million numbers	23.5	31.3	43.5	63.9	85	47
school going children as percentage of children in respective age-groups :							
primary stage . . . . . 6-11 years		42.6	52.9	61.1	76.4	79(i)	45(i)
middle stage . . . . . 11-14 years		12.7	16.5	22.8	28.6	102(i)	55(i)
high/higher secondary stage . . . . . 14-17 years		5.3	7.8	11.5	15.6	139(i)	57(i)
institutions :							
primary/junior basic schools . . . . . 000 numbers		209.7	278.1	342.0	415.0	63	21
middle/senior basic schools . . . . . 000 numbers		13.6	21.7	39.6	57.7	191	46
high/higher secondary schools . . . . . 000 numbers		7.3	10.8	16.6	21.8	128	31
multipurpose schools . . . . . 000 numbers		—	0.3	2.1	2.4	..	14
7.2 technical education							
engineering and technology : degree level (intake) . . . . . number		4120	5890	13858	19137	236	38
diploma level (intake) . . . . . number		5900	10480	25570	37390	1333	46
agriculture colleges (intake) . . . . . number		1060(j)	1989	4600	6200	334	35
veterinary colleges (intake) . . . . . number		434(j)	1269	1300	1460	200	12

(c) Relates to calendar year.

(h) Calendar year 1951.

(i) Worked out from enrolment figures.

(j) Relates to 1951-52.

item	unit	1950-51	1955-56	1960-61 estimated	1965-66 targets	percentage increase in 1960-61 over 1950-51	percentage increase in 1965-66 over 1960-61
1	2	3	4	5	6	7	8
8. health							
8.1 institutions							
hospitals and dispensaries	. . . 000 numbers	8.6	10.0	12.6	14.6	47	16
hospital beds	. . . 000 numbers	113	125	186	240	65	29
primary health units	. . . number	—	725	2800	5000	..	79
family planning centres	. . . number	—	147	1649	8200	..	397
8.2 personnel							
medical colleges (intake)	. . . number	2500	3500	5800	8000	132	38
doctors (k)	. . . 000 numbers	56	65	70	81	25	16
nurses (k)	. . . 000 numbers	15.0	18.5	27.0	45.0	80	67
auxiliary nurse-midwives and midwives (k)	. . . 000 numbers	8.0	12.8	19.9	48.5	149	144
nurse-dais and dais (k)	. . . 000 numbers	1.8	6.4	11.5	40.0	539	248
health assistants and sanitary inspectors	000 numbers	3.5	4.0	6.0	19.2	71	220

(k) In practice or in service.

# ANNEXURE II Outlay during the Second Plan and cost of physical programmes in the Third Plan— estimates by heads

(Rs. lakhs)

head of development	estimated outlay in Second Plan			estimated cost of programmes in Third Plan						
	States		Union Territories	States and Union Territories	Centre		States		Union Territories	States and Union Territories
	2	3	4	5	6	7	8	9	10	11
I										
agricultural production	8367	268	8635	1075	9810	18351	598	18949	3658	22607
minor irrigation	9166	98	9264	230	9494	17269	177	17446	230	17676
soil conservation	1553	8	1561	200	1761	5732	246	5978	1295	7273
animal husbandry	1869	73	1942	200	2142	4592	172	4764	680	5444
dairying and milk supply	958	3	961	244	1205	3086	24	3110	498	3608
forests	1656	122	1778	150	1928	4204	268	4472	667	5139
fisheries	710	26	736	170	906	2090	102	2192	672	2864
warehousing, marketing and storage	310	18	328	170	498	843	10	853	3300	4153
I. agricultural programmes	24589	616	25205	2439	27644	56167	1597	57764	11000	68764
cooperation	3278	55	3333	50	3383	6959	151	7110	900	8010
community development	18744	463	19207	200	19407	28189	578	28767	600	29367
panchayats	460	30	490	1976(a)	2466	2824	56	2880	—	2880
II. community development and cooperation	22482	548	23030	2226	25256	37972	785	38757	1500	40257

(a) Includes expenditure for local development works.

(Rs. lakhs)

head of development	estimated outlay in Second Plan						estimated cost of programmes in Third Plan				
	States			Union Territories			States	Union Territories		Centre	total
	2	3	4	5	6	7		8	9		
I	2	3	4	5	6	7	8	9	10	11	
irrigation	.	.	.	.	.	.	.	.	.	.	.
flood control	.	.	.	.	.	.	.	.	.	.	.
power	.	.	.	.	.	.	.	.	.	.	.
III. irrigation and power	.	.	.	.	.	.	.	.	.	.	.
industries and minerals.	.	.	.	.	.	.	.	.	.	.	.
village and small industries	.	.	.	.	.	.	.	.	.	.	.
IV. industries and minerals	.	.	.	.	.	.	.	.	.	.	.
railways	.	.	.	.	.	.	.	.	.	.	.
roads	.	.	.	.	.	.	.	.	.	.	.
road transport	.	.	.	.	.	.	.	.	.	.	.
tourism	.	.	.	.	.	.	.	.	.	.	.
ports and harbours	.	.	.	.	.	.	.	.	.	.	.
shipping	.	.	.	.	.	.	.	.	.	.	.
posts and telegraphs	.	.	.	.	.	.	.	.	.	.	.
civil aviation	.	.	.	.	.	.	.	.	.	.	.
broadcasting	.	.	.	.	.	.	.	.	.	.	.
other transport	.	.	.	.	.	.	.	.	.	.	.
other communications	.	.	.	.	.	.	.	.	.	.	.
V. transport and communications	.	.	.	.	.	.	.	.	.	.	.

V. transport and communications

16338 1846 18184 111791 129975 25031 3462 28493 136980 165473

# THE THIRD PLAN IN OUTLINE

general education and cultural programmes . . . . .	16011	721	16732	4072	20804	31906	2104	34010	7800	41810
technical education . . . . .	2141	31	2172	2600	4772	6986	173	7159	7000	14159
scientific and technological research	—	—	—	—	—	—	—	—	7000	7000
health . . . . .	13021	566	13587	8047	21634	27114	2566	29680	4500	34180
housing . . . . .	6411	266	6677	1356	8033	9620	2076	11696	2500	14196
welfare of backward classes . . . . .	5080	214	5294	2647	7941	7498	389	7887	3500	11387
social welfare . . . . .	327	10	337	1181	1518	1048	114	1162	1600	2762
labour and labour welfare . . . . .	769	12	781	1200	1981	2519	189	2708	4400	7108
rehabilitation . . . . .	—	—	—	6341	6341	—	—	—	4000	4000
public cooperation and local works	—	—	—	—	—	34(c)	—	34	5000	5034
VI. social services . . . . .	43760	1820	45580	27444	73024	86725	7611	94336	473000	141636

(b) In the Second Plan, outlay for flood control is shown at the Centre.

(c) Includes part provision for D.V.C. power programme and Bandel thermal station.

(d) For Andaman and Nicobar Islands.

(e) In addition to this amount, outlay for 'public cooperation' will have to be found within the agreed Third Plan ceiling by suitable adjustment in the following States : Rs. 6 lakhs each in Andhra Pradesh, Bihar, Madras, Madhya Pradesh and West Bengal; Rs. 5 lakhs in Mysore and Rs. 1 lakh in Assam.

(Rs. lakhs)

head of development	estimated outlay in Second Plan					estimated cost of programmes in Third Plan				
	States		Union Territories			total	States		Union Territories	
	2	3	4	5	6		7	8	9	10
I										
statistics and research	403	7	410				322	27	349	500
information and publicity	276	21	297				562	58	620	600
local bodies	415	44	459				310	65	375	—
State capital projects	3196	—	3196			9980	2475	—	2475	—
others	507 <sup>2</sup>	225	532				1075	933	2008	4100
VII. miscellaneous	4797	97	4894	5086 (f)	9980		4744	1083	5827	5200
grand total	198135	6158	204293	255707	460000		384731(g)	17487	402218	407635(h)
										809853(h)

(f) Includes also anticipated outlay on account of Department of Atomic Energy, schemes of the Ministry of Finance and office and residential buildings under the programmes of Ministry of Works, Housing and Supply.

(g) The distribution of outlays in West Bengal is subject to adjustments: (i) on account of West Bengal's share in the D.V.C., and (ii) increase in resources estimated at Rs. 43 crores, which the State Government expect to raise above the level of Rs. 90 crores shown in Chapter VI—Financial Resources.

(h) This excludes provision of Rs. 200 crores for 'Inventories'.

## ANNEXURE III

## Outlays during the First, Second and Third Plans for States and Union Territories

(Rs. crores)

State/Union Territory	First Plan (actual)	Second Plan (estimated)	Third Plan (programme outlay)
Andhra Pradesh . . . . .	108	175	305
Assam . . . . .	28	51	120
Bihar . . . . .	102	166	337
Gujarat . . . . .	224(a)	143	235
Jammu and Kashmir . . . . .	13	25	75
Kerala . . . . .	44	76	170
Madhya Pradesh . . . . .	94	145	300
Madras . . . . .	85	167	290.9
Maharashtra . . . . .	(b)	207	390
Mysore . . . . .	94	122	250
Orissa . . . . .	85	85	160
Punjab . . . . .	163	148	231.4
Rajasthan . . . . .	67	99	236
Uttar Pradesh . . . . .	166	227	497
West Bengal . . . . .	154	145	250(c)
total—States . . . . .	1427	1981	3647.3
Andaman and Nicobar Islands . . . . .	2	3	9.8
Delhi . . . . .	10	14	81.8
Himachal Pradesh . . . . .	8	16	27.9
Manipur . . . . .	2	6	12.9
N. H. and T. A. . . . .	—	4	7.1
Tripura . . . . .	3	9	16.3
Laccadive, Aminidive and Minicoy Islands . . . . .	—	0.4	1.0
N.E.F.A . . . . .	4	5.6	7.1
Pondicherry . . . . .	1	4	6.9
total—Union Territories . . . . .	30	62	174.8(d)
total—all India . . . . .	1457	2043	4022.1

(a) For the composite State of Bombay.

(b) Indicated against Gujarat.

(c) Provisional.

(d) Includes an unallocated amount of Rs. 4 crores.



## CHAPTER VI

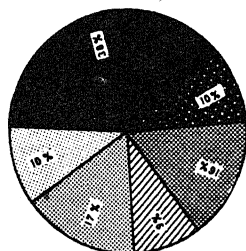
### FINANCIAL RESOURCES FOR THE PLAN

THE programmes of development in the public sector included in the Third Plan are estimated to involve an outlay of over Rs. 8000 crores. These programmes are closely interconnected and every effort has to be made to secure their full and orderly implementation. There are, however, uncertainties to be reckoned with. The actual expenditure incurred on several important projects depends upon how far the foreign exchange required is available and when precisely the necessary capital goods and equipment can be imported and installed. Progress in respect of important projects is linked with advance in certain others which are complementary. Any lag in one item of the investment programme may affect the pace of work on other items. The Third Plan postulates that the fullest effort will be made to mobilise internal resources and to carry through the accepted programmes with expedition. Nevertheless, some shortfalls in expenditure may be unavoidable, and part of the outlays corresponding to the physical programmes that have been approved may spill over into the Fourth Plan. As regards external assistance, it has been assumed that the total of actual payments against such assistance during the Plan period will be limited to Rs. 2100 crores (apart from assistance for meeting repayment liabilities) although the requirements on present estimates add up to a higher figure. Bearing these considerations in mind, financial outlays in the Third Plan are being taken at Rs. 7500 crores: Rs. 6300 crores by way of investment expenditure and Rs. 1200 crores by way of current outlays on social services and other developmental but recurring items. The financial provisions envisaged at present could, it is felt, be improved upon if production and savings increase sufficiently; the objective must be to implement the physical programmes accepted by raising resources beyond the level indicated by the present estimates.

2. Of the investment outlay in the public sector of Rs. 6300 crores, about Rs. 200 crores represents transfers to assist selected investments in agriculture, industry, housing etc., in the private sector. Private investment over the Third Plan is estimated at Rs. 4300 crores; the resources to be found by the private sector are of the order of Rs. 4100 crores.

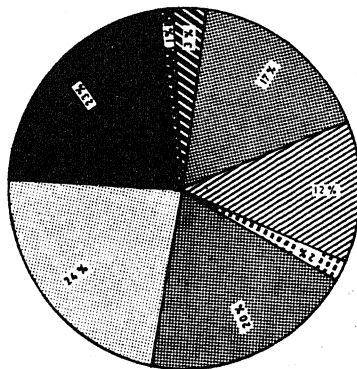
# FINANCING OF PLAN OUTLAYS IN THE PUBLIC SECTOR

FIRST PLAN



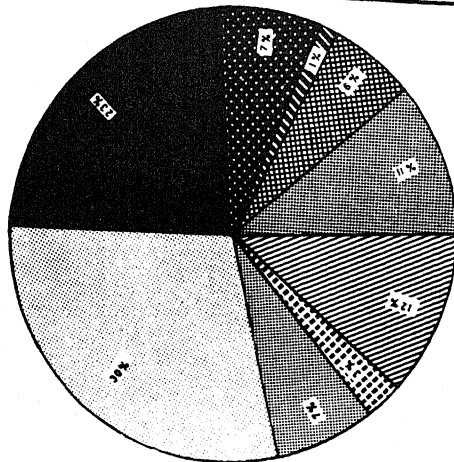
Rs. 1960 crores

SECOND PLAN



Rs. 4600 crores

THIRD PLAN



Rs. 7500 crores

FIRST PLAN	Rs. crores	TAXATION & SURPLUSES OF RAILWAYS
	7.52	
	2.06	PUBLIC LOANS (net)
	3.04	SMALL SAVINGS & UNFUNDED DEBT
	1.78	MISCELLANEOUS CAPITAL RECEIPTS (net)
	3.33	DEFICIT FINANCING
	1.89	EXTERNAL ASSISTANCE

SECOND PLAN	THIRD PLAN	Rs. crores
10.92	17.10	ADDITIONAL TAXATION
-5.0	5.0	BALANCE FROM CURRENT REVENUES
1.50	1.00	CONTRIBUTION OF RAILWAYS
4.30	4.30	SURPLUSES OF OTHER PUBLIC ENTERPRISES
7.80	8.00	PUBLIC LOANS (net)
5.70	8.65	SMALL SAVINGS & UNFUNDED DEBT
8.0	27.5	MISCELLANEOUS CAPITAL RECEIPTS (net)
9.48	5.50	DEFICIT FINANCING
10.90	22.00	EXTERNAL ASSISTANCE



3. The total investment programme for the Third Plan thus comes to Rs. 10,400 crores—Rs. 6100 crores in the public sector and Rs. 4300 crores in the private sector. The public sector has to find Rs. 7500 crores in all, including in this total Rs. 200 crores mentioned above and Rs. 1200 crores for current outlays.
4. An investment of the order of Rs. 10,400 crores over the five year period will mean a stepping up of the rate of investment from the current level of about 11 per cent of national income to about 14 per cent. Part of this investment is to be financed through external assistance. The rate of domestic savings will have to be raised from the current level of about 8.5 per cent of national income to about 11.5 per cent by the end of the Third Plan. It is evident that this will require the fullest effort to increase total output as envisaged in the Plan and steady pursuit of economic policies designed to keep consumption within the limits set by the requirements of investment. Considering the progress that has been made over the last decade in increasing production as well as in strengthening the potential for further expansion, the investments and savings goals and the targets of the Plan are attainable, given efficient mobilisation and deployment of resources and availability of foreign exchange.
5. Over the last ten years there has been a striking increase in investment in the economy. Public sector investment at the commencement of the First Plan was around Rs. 200 crores. By the end of the First Plan, it had risen to about Rs. 450 crores. In 1956-57, the very first year of the Second Plan, it reached a level of Rs. 500 crores and in the final year of the Second Plan it rose to about Rs. 800 crores. Thus, the increase in public sector investment in financial terms over the last ten years has been about fourfold. The Second Plan has also been characterised by high levels of investment in the private sector. While data on the break-up of this investment are not adequate, it is noteworthy that in large and medium industry and mining, the level of investment averaged Rs. 145 crores over the last five years as compared to Rs. 45 crores in the First Plan period.
6. The First Plan involved a sizeable step-up in investment—from about 5 per cent of national income to over 8 per cent. The substantial increases—both in agricultural and in industrial production—that were recorded during the Plan period made it possible to achieve this step-up in investment without causing any significant strain on the domestic price level or on the balance of payments. In fact, the prices fell sharply about the middle of the First Plan and the index of wholesale prices was 8 per cent lower at the end of that Plan as compared to the pre-Korean level.

7. The scale of investment envisaged in the Second Plan was significantly larger than in the First Plan. The pattern of investment was also markedly different. The investments in industry, transport and power by the public sector totalled Rs. 2650 crores as compared to Rs. 820 crores in the First Plan. Private investment in industry, transport and power in the Second Plan period was about Rs. 1025 crores as compared to about Rs. 310 crores in the First Plan period. These developmental tasks involved a greater strain on the economy, especially on the balance of payments.

#### RESOURCES : PHYSICAL AND FINANCIAL

8. Mobilisation of resources for securing an adequate rate of growth is the crux of the problem of planning in an under-developed economy. The problem may be presented in terms of the physical inputs needed and their availability or as one of finding a quantum of financial resources adequate to cover the cost of the various development programmes, public and private, included in the Plan. The two approaches, if worked out fully, should give the same result. Resources in physical terms are disparate, and the task of working out detailed physical balances that could be relied on in practice is a difficult one, especially in view of the inadequacy of data and the large number of assumptions inevitably involved. The estimation of needs of resources in financial terms has also its limitations. Each project authority is apt to make its estimate of the financial resources required on the assumption that it can secure whatever real resources it needs at current prices, irrespective of what the demands from other project authorities or the economy as a whole are likely to be. This is where the financial and physical possibilities have to be assessed together. The question ultimately is whether there are physical resources corresponding to the financial outlays. This aspect has to be taken care of by providing in the Plan adequate increases in outputs in key sectors and by ensuring that certain types of resources are obtained from abroad.

9. A Plan of economic development is not merely a list of programmes or projects to be implemented; it is a blue-print for the allocation of all the resources available to the community as between their different uses. The physical inputs needed for the accepted programmes have to be provided for; the consequential demands or adjustments called for elsewhere in the economy have also to be taken due account of. These complex inter-relations cannot always be precisely gauged in advance. The scale of investment and the pattern of resource mobilisation have, in the last analysis, to be considered in terms of an overall judgement as to what the optimum feasible is. This judgement may have to

be reviewed from time to time and there has to be a measure of flexibility in the Plan to permit the necessary adjustments in outlays. Since, however, the objective is to carry through the physical programmes approved, and since any shortfall or slowing down on these affects the pace of further advance, effort has to be concentrated on mobilisation of the resources required. The techniques of resource mobilisation and the scope for using each one of these more effectively have thus to be kept under continuous review.

10. Whether one starts with the question as to how much of resources can be raised in various ways or whether one takes the scale of outlays as the starting point is a matter of procedure rather than of principle. The process of arriving at conclusions is one of assessment and reassessment of both these with a view to determining the optimum scale of effort and the results to be secured within a given period. Resources are not a fixed fund to be drawn upon; they depend partly on the scale of investment being undertaken and the resulting increases in output during the Plan period. A Plan of development has thus to be accepted on a consideration of whether the proposed scale and pattern of investment gives the results that are felt to be adequate in terms of certain economic and social criteria and whether, on a view of the growth of resources in the period of the Plan, the outlays proposed can be financed without causing serious strains and stresses in the system. It is on a balancing of these considerations that the phasing of programmes and limits for financial outlays have to be determined.

#### FINANCE FOR THE PUBLIC SECTOR

11. The resources position for the Third Plan has been studied in detail over the last two years or so. The estimates presented in the Draft Outline were based on 1960-61 budgets of the Central and State Governments. During August-September 1960, discussions were held with State Governments to arrive at an assessment of their resources for the Third Plan period. Some of these estimates were again reviewed in the course of discussions with the States on their Plan outlays. On the basis of these data and a further examination of the Centre's budget for 1960-61, revised estimates of the financial resources likely to be available to the Centre and to the States were submitted to the National Development Council in January, 1961. In the light of these estimates, the National Development Council decided that the resources available for the Third Plan should be taken at Rs. 7500 crores, although the cost of the physical programmes being approved was larger. The following Table gives the resources estimates for the Third Plan as approved by the

National Development Council and the corresponding estimates of the Draft Outline:

Table 1: Resources for the Third Plan  
(Estimates for the Draft Outline and as presented to the N.D.C. in January 1961)

item	estimates for the Draft			(Rs. crores) estimates as presented to N.D.C. in January 1961		
	Centre	States	total	Centre	States	total
1 balance from current revenues at 1960-61 rates of taxation	385	—35	350	433	—12	421
2 contribution of Railways	150	..	150	71	..	71
3 surpluses of other public enterprises	300	140	440	300	149	449
4 loans from the public (net)	520	330	850	500	350	850
5 small savings (net)	190	360	550	208	377	585
6 provident funds (net)	170	60	230	170	79	249
7 steel equalisation fund (net)	160	..	160	160	..	160
8 balance of miscellaneous capital receipts over non-plan disbursements	325	—205	120	441	—233	208
9 total of 1 to 8	2200	650	2850	2283	710	2993
10 additional taxation including measures to increase the surpluses of public enterprises	1100	550	1650	1100	610	1710
11 budgetary receipts corresponding to external assistance	2200	..	2200	2200	..	2200
12 deficit financing	550	..	550	524	26	550
total	6050	1200	7250	6107	1346	7453

12. The National Development Council noted that considering the needs of the economy, every effort had to be made to bridge the gap between the figure of Rs. 7500 crores for the financial outlays indicated by the estimates of resources and the requirements adding upto over Rs. 8000 crores for implementing the physical programmes envisaged. It was evident that the answer to the problem depended upon how far domestic savings could be stepped up to match the larger needs. The Council appointed a Committee to study and explore further possibilities in this direction. In the course of the last few months, further studies have been made of the 1961-62 budgets of the Central and State Governments and of the scope for getting more resources under each of the heads shown in the table above. In the light of this examination the Committee felt that there was warrant for taking a more optimistic view of the total resources that could be raised by the Centre and the States. The latest budget estimates show a greater buoyancy in revenue than was allowed for earlier. It was, however, not possible at this stage to set out precisely the lines along which the gap between the requirements of physical programmes

and the financial provisions could be bridged. It was also necessary to bear in mind the limitations in respect of foreign exchange resources. The problem would need continuous review in the light of the advance made each year in mobilising resources. Accordingly, while the financial outlays are at present being retained at Rs. 7500 crores, sustained efforts will be made to improve upon this estimate and to diminish the gap through more effective mobilisation of savings.

13. The scheme of financing the public sector Plan that is now envisaged is as indicated in the Table below. For comparison, the contribution by each major source of finance in the Second Plan period is also shown in the Table:

Table 2: Financial resources

(Estimates for the Second and the Third Plans)

item	(Rs. crores)		Third Plan
	Second Plan as initially estimated	as estimated now	
1 balance from current revenues (excluding additional taxation)	350	—50	550
2 contribution of Railways	150	150(a)	100
3 surpluses of other public enterprises	(b)	(b)	450
4 loans from the public (net)	700	780(c)	800
5 small savings (net)	500	400	600
6 provident funds (net)	250	170	265
7 steel equalisation fund (net)		38	105
8 balance of miscellaneous capital receipts over non-plan disbursements		22	170
9 total of 1 to 8	1950	1510	3040
10 additional taxation including measures to increase the surpluses of public enterprises	450(d)	1052	1710
11 budgetary receipts corresponding to external assistance	800	1090(e)	2200
12 deficit financing	1200	948	550
total	4800	4600	7500

14. Over the Second Plan period, aggregate financial outlay in the public sector has been below the target initially accepted but a little above the revised target. The inflationary pressures and the balance of payments

(a) Inclusive of increased fares and reights.

(b) Included in items 1 and 8 in the Table.

(c) Includes investment by the State Bank out of P.L. 480 funds.

(d) In addition there was a gap of Rs. 400 crores to be covered by additional domestic effort.

(e) This includes investment of P.L. 480 funds by the Reserve Bank in special securities in 1960-61.



difficulties that emerged in the early stages of the Plan necessitated a reappraisal of the resources outlook and it was decided (a) to limit the five-year outlays to Rs. 4500 crores or so and (b) to mobilise external assistance on a larger scale and to concentrate effort on the implementation of 'core' projects. The Second Plan target for additional taxation has been substantially exceeded. On the other hand, the balance available from current revenues has shown a net fall of Rs. 400 crores as compared to the estimates that were worked out when the Plan was formulated. On small savings also, the collections over the five-year period have been about Rs. 100 crores less than the level envisaged earlier. Deficit financing in the Second Plan period has been within the limits set in the Plan. Part of this deficit financing was offset by the drawing down of foreign exchange reserves. The rise in prices that has occurred despite this indicates that the scope for further deficit financing in the coming years is limited.

15. The experience of the Second Plan highlights the fact that despite all the care that may be taken in estimating the contribution likely to be secured from each of the sources indicated in the table, the outturn on individual items is in practice, liable to diverge from the estimates. For the five-year period ahead, it is, therefore, essential to focus attention on the adequacy of the financing scheme as a whole rather than on estimates in respect of each item taken by itself. The estimates of surpluses from revenues, for example, have to be made on certain assumption as to the growth of tax yields in response to the increase in economic activity. The growth rates in the economy may, however, vary from year to year and the response of tax yields depends on where the new incomes flow. Similarly, on the expenditure side the likely trends in non-Plan expenditure, both developmental and non-developmental, can be estimated in terms only of broad orders of magnitude. A small change in the assumptions can make a sizeable difference to the total figure under this head, especially since account has to be taken not only of the Central budget but of the budgets of fifteen States. Then, again, the data available regarding surpluses of public enterprises other than the railways are incomplete. Some of the projects are in the early stages of production; some will commence production in the latter part of the Plan period. The estimates of unit costs for all these projects are not precise; the estimates of the surpluses that have been made at this stage can be regarded as only rough indications. The different modes of raising resources are at some point interdependent, and it is possible that while in one situation more can be secured by way of taxation, in another situation recourse to market borrowing may yield a better result. Timely availability of external assistance has also an important bearing on the domestic savings and investment effort. In the paragraphs that follow the estimates for the Third Plan in respect of each item are explained.

16. *Balance from revenues.*—Revenue receipts of the Central and State Governments over the Third Plan are estimated to total Rs. 9250 crores

as compared to the estimated receipts of about Rs. 1600 crores in 1960-61 (R.E.). The aggregate expenditures, non-developmental and developmental including those on the maintenance of schemes completed by the end of the Second Plan period, are estimated to add up to Rs. 8700 crores. Thus the surplus available for financing Plan outlays is at present estimated at Rs. 550 crores over the Plan period. For working out the estimates of receipts, account has been taken of the increases in production in important lines as also of the expected rise in national income as a whole. On the side of expenditure, past trends have been projected, making allowance for expected variations and after providing for committed expenditure in respect of schemes that were part of the Second Plan but will, on the completion of that Plan, become a prior charge on revenues. The substantial increase in the expected balance from revenues during the Third Plan as compared to the Second reflects the increases in tax receipts that have taken place in the last two years partly as a result of increased economic activity and partly because of the additional tax effort that has been put through. Taxation undertaken in 1961-62 is not taken into account under this head; it is part of the additional tax effort of Rs. 1710 crores envisaged for the Third Plan.

17. *Contribution of the Railways.*—This represents the surpluses of the expected current earnings of the railways over their working expenses (excluding expenditure on 'Open Line Works' which is treated as investment) after providing for depreciation outlays and the payment of interest and dividend in accordance with existing arrangements. In the Second Plan the contribution amounted to Rs. 150 crores; this was inclusive of receipts from increases in fares and freights carried out during the Second Plan period. The estimated surplus of Rs. 100 crores over the Third Plan is, however, exclusive of any additional resources that the railways might be able to raise during the Plan period by way of adjustments in fares and freights.

18. *Surpluses of other public enterprises.*—This item represents the balance of resources available with public enterprises after providing for their working expenses, normal replacements, interest and dividend. In other words, it does not represent merely net profits; it also includes net accretions to depreciation reserve funds and other funds of these enterprises, the assumption being that these funds will be utilised for financing the expansion programmes of these enterprises. The estimate is tentative, as the data on which it is based are not sufficiently firm. Of the total of Rs. 450 crores, Rs. 300 crores is in respect of Central Government enterprises, namely, iron and steel, fertilisers, oil companies, refineries, posts and telegraphs etc., and the remaining Rs. 150 crores is to come from the enterprises of State Governments, namely, electricity boards, transport undertakings etc.

19. *Loans from the public.*—Market borrowings over the Second Plan period amounted to Rs. 780 crores. The target set for the Third Plan is being taken at Rs. 800 crores, inclusive of the net collections under the prize bonds scheme. In comparing the target for the Third Plan with the total of market borrowings in the Second Plan period, it has to be borne in mind that the latter include substantial investments in Government securities by the State Bank of India out of the deposits of P. L. 480 funds as also sizeable purchases by the Reserve Bank. The net absorption of market loans by the public, including commercial banks, but excluding the Reserve Bank, was less than Rs. 300 crores. In the Third Plan period, P.L. 480 funds to the credit of the U.S. authorities will be held with the Reserve Bank which will buy special securities created for the purpose. Credit on this account has been taken under external assistance. Whatever support the Reserve Bank may have to give to the loan programme has of course to figure under deficit financing. The estimate of Rs. 800 crores for the Third Plan period envisages considerable increase in the absorption of Government securities by the Life Insurance Corporation, the various Provident Funds and other investors. Credit has also been taken for moderate absorption by commercial banks. Borrowings—other than normal bank advances—by electricity boards or other enterprises of State Governments are included in the respective State targets for market loans. The requirements of the cooperative sector are, however, not included in the above estimate. The Plan envisages a considerable expansion of this sector and in assessing what the capital market can provide by way of subscriptions to Central and State loans, the claims of cooperative agencies have to be borne in mind. Market borrowings of the order envisaged postulate a sizeable growth in the resources of the commercial banks and careful regulation of bank credit to the private sector.

20. *Small savings.*—The target of small savings in the Second Plan was Rs. 500 crores; the actual collections are now estimated at about Rs. 400 crores. The potentialities of small savings are large and they will grow further as incomes increase. The movement has so far been confined largely to urban and semi-urban areas. In the coming years a considerable proportion of rural savings will go to cooperative agencies and it is as important to ensure that the finance for the cooperative sector is provided for as to enlarge the resources coming into the public sector. Nevertheless, small savings represent a promising field in which further effort can bring large results. The question is one of proper organisation and the lines along which the present field agencies can be strengthened deserve careful study.

21. *Provident funds, Steel Equalization Fund and Balance of Miscellaneous Capital receipts over non-Plan disbursements.*—As compared to net additions to provident funds of the order of Rs. 170 crores in the

Second Plan, the estimate for the Third Plan works out at Rs. 265 crores. This is because of the increased pay scales for certain classes of employees both at the Centre and in the States and the introduction of a compulsory provident fund scheme at the Centre. Under Steel Equalization Fund, the net accrual in the Third Plan period is estimated at Rs. 105 crores. In respect of other items of capital receipts, including betterment levies, funds and deposits, the net receipt in the Third Plan period is estimated at Rs. 170 crores as compared to Rs. 22 crores in the Second Plan. This is the net result of a large number of items of receipts and expenditure on capital account. The main sources of receipts are betterment levy, recoveries of loans and advances from local bodies, cultivators and others, transfer from revenues to funds, net receipts under miscellaneous deposits, funds, remittances etc. On the expenditure side, the items to be reckoned, among others, are compensation payments to refugees and zamindars, loans and advances to cultivators, losses on State trading, if any, and other items of non-Plan disbursements, including outlays on civil works outside the Plan. The estimate of Rs. 170 crores for the Third Plan period has been worked out on a study of the past trends and on the assumption that non-Plan capital disbursements are kept down to the minimum. The estimate also postulates that recoveries in respect of arrears of outstanding loans and advances will be expedited.

22. *Budgetary receipts corresponding to external assistance.*—The credit of Rs. 2200 crores taken against this item corresponds to total external assistance of Rs. 3200 crores that is envisaged in the Plan. The entire amount of Rs. 3200 crores does not come to the public exchequer. Rs. 450–500 crores of the total receipts of external assistance will go towards repayments of loans maturing during the Third Plan. About Rs. 300 crores might go directly to the private sector by way of private capital inflows or loans from agencies like the I.B.R.D., the International Finance Corporation and the U.S. Export-Import Bank. Another Rs. 200 crores may represent agreed retentions of rupee resources by the U.S. authorities and additions to buffer stocks from P.L. 480 imports. Thus, about Rs. 1000 crores in all would not be available for the budget; the net credit that can be taken under this head is about Rs. 2200 crores as against the total external assistance of Rs. 3200 crores.

23. *Deficit financing.*—In view of the rise in prices that has occurred during the Second Plan period and the fact that, unlike in the Second Plan, there is no cushion of foreign exchange reserves that can be drawn upon as an offset to deficit financing, it is proposed to limit deficit financing in the Third Plan to the minimum warranted by the genuine monetary needs of the economy. There is, of course, no precise way of estimating the limits of safe deficit financing. Increases in money supply take place not only through the budgetary operations of Government but

also through credit creation by the banking system. Both these have to be viewed together and their appropriate limits decided upon in the light of relative requirements as well as what the economy can absorb in the aggregate. On a broad view of all these factors, the limit for deficit financing in the Third Plan period has been placed at Rs. 550 crores, exclusive of the direct extension of credit by the Reserve Bank to co-operative agencies. The amount of deficit financing that can be undertaken has, however, to be judged from year to year in the light of emerging economic trends. What is required for implementing the Plan, whether in the public or in the private sector, are real resources and these depend upon the rate at which production goes up and the extent to which the community is prepared to defer consumption and enlarge savings. Deficit financing within moderate limits has a place in developmental planning but if it adds to purchasing power unduly at a time when the need is to keep it down so as to restrict consumption within the limits provided for the Plan, the consequences to the economy can be highly deleterious.

24. The following Table gives the resources estimates for the Third Plan separately for the Centre and the States:

Table 3: Resources for the Third Plan

item	(Rs. crores)		
	Centre	States	total
1 balance from current revenues (excluding additional taxation)	410	140	550
2 contribution of Railways	100	..	100
3 surpluses of other public enterprises	300	150	450
4 loans from the public (net)	475	325	800
5 small savings (net)	213	387	600
6 provident funds (net)	183	82	265
7 steel equalisation fund (net)	105	..	105
8 balance of miscellaneous capital receipts over non-plan disbursements	428	—258	170
9 total of 1 to 8	2,214	826	3,040
10 additional taxation including measures to increase the surpluses of public enterprises	1,100	610	1,710
11 budgetary receipts corresponding to external assistance	2,200	..	2,200
12 deficit financing	524	26	550
total	6,038	1,462	7,500

#### RESOURCES OF STATE GOVERNMENTS

25. On the basis of the discussions held with the States in August–November, 1960 the total of their resources came to Rs. 1416 crores. Annexure I at the end of this chapter gives the State-wise details of this

estimate. This estimate needed revision in two respects: (i) interest liability on account of fresh loans from the Centre in the Third Plan and (ii) reduction in the earlier estimates of borrowings from the public. At the time of the discussions, precise estimates of interest liability in respect of loans from the Centre could not be made, and the *ad-hoc* figures taken at the time were found to be on the low side. In respect of borrowings from the public, the estimate as emerging from the discussions had to be corrected so as to make it consistent with the overall estimate for the Centre and the States together. After making these two adjustments the estimate of States' resources came to Rs. 1346 crores.

26. The further review of States' resources undertaken in the light of the 1961-62 budgets indicates that the resources picture for the States is considerably better; the total of States' resources now comes to Rs. 1462 crores. The main factor in the improvement is the larger transfers of resources from the Centre under income-tax and shareable excises. The following Table gives the estimates of States' resources as presented to the National Development Council in January, 1961, and as re-worked recently in the light of the 1961-62 budgets.

Table 4: States' Resources for the Third Plan

item	(Rs. crores)	
	estimates as [presented to the N.D.C. in January, 1961	estimates as worked out in the light of 1961-62 budgets
1 balance from current revenues at 1960-61 rates of taxation	—12	140
2 surpluses of public enterprises	149	150
3 loans from the public (net)	350	325
4 small savings (net)	377	387
5 provident funds (net)	79	82
6 balance of miscellaneous capital receipts over non-plan disbursements	—233	—258
7 total of 1 to 6	710	826
8 additional taxation, including measures to increase the surpluses of public enterprises	610	610
9 deficit financing (i. e. sale of securities)	26	26
total	1,346	1,462

The State-wise details of this revised estimate have yet to be worked out.

27. With States' resources at Rs. 1462 crores and Central assistance at Rs. 2375 crores, the total of the resources available for financing State Plans comes to Rs. 3837 crores. This is close to the programme limit of Rs. 3847 crores which has been suggested for State Plans. On present indications, thus, the gap between the programme limit and financial resources for the States is, if anything, negligible. With strict economies in expenditure, especially on outlays outside the Plan, it might, in fact, be possible for the States to finance out of their own resources some increases in outlays in respect of rural employment schemes.

#### ADDITIONAL TAXATION

28. The additional taxation target accepted initially in the Second Plan was Rs. 450 crores. It was recognised that this target was inadequate and that the bulk of the gap of Rs. 400 crores shown in the financing scheme for the Second Plan would have to be made good by additional taxation. The total of additional taxation actually put through in the course of the Second Plan was Rs. 1052 crores, which is considerably in excess of the initial target plus the gap just mentioned. Even with this measure of additional taxation the proportion of tax revenues to national income rose from about 7.5 per cent. of national income at the beginning of the Second to about 8.9 per cent by the end of that Plan. With the normal increase in tax yields as a result of rising national income and the additional taxation of Rs. 1710 crores that is proposed over the Third Plan period, the proportion of tax revenues to national income will go up to 11.4 per cent by the end of the Third Plan. Considering the requirements of the Third Plan and the rise in incomes expected, this order of additional taxation is essential as well as practicable, and a substantial beginning towards this effort has been made in the Central budget for 1961-62.

29. It was stressed both in the First and in the Second Plans that a progressive enlargement of public savings is an essential element in sound financing of public sector programmes in a developing economy. Undoubtedly, there are limits to taxation and a number of complex economic as well as other considerations are involved in working out the concrete taxation measures to be adopted for realising a given target. To a considerable extent, programmes of investment in the public sector have to be financed by channelling into the public exchequer a part of the aggregate savings arising in the private sector. The programmes of public borrowings and small savings have to be oriented to this end. Nevertheless, a significant element in the financing of investment in the public sector has to be public savings, that is, the surpluses of revenue receipts over non-investment expenditure together with the surpluses of

public enterprises. The need to maximise the surpluses of public undertakings has to be borne in mind in deciding on the price policy in respect of the products of those enterprises. Enlargement and ploughing back of profits of public enterprises have an important contribution to make to the financing of development.

30. The choice between different forms of taxation has to be made on a consideration of the existing levels and the likely incidence and effects of further increases in each direction. There is scope in a developing economy for increasing the receipts both from direct as well as from indirect taxation. Direct taxation seeks to keep down consumption and enlarge the investible surplus by reducing disposable incomes. Indirect taxation works through a reduction in the quantum of goods that can be brought against the incomes that are spent. The relative merits of each form of taxation have to be determined pragmatically. The crucial point is to locate the surpluses as they are being generated in consequence of development so that additional taxation could be directed appropriately. The details of tax measures to be adopted during the Third Plan will have to be decided upon in the light of the economic situation as it emerges from year to year. It must be stressed, however, that if taxation in the aggregate is inadequate, this means not merely a loss of so much of resources for investment but a pressure on domestic prices that may affect the structure of production and aggravate economic inequalities.

31. In the field of income tax, the scope for raising the rates generally is limited, although adjustments in tax rates in particular income brackets may be necessary from time to time. The objective of these adjustments must be to enlarge public resources and to spread the burden equitably as between different groups of income earners. There are at present a number of other taxes on personal incomes and wealth: the wealth tax, the capital gains tax, the expenditure tax and estate duty. The yield from these taxes is relatively small. The object of all these taxes taken together is not only to secure larger receipts for the public exchequer but also to reduce economic inequalities. It is essential in this context that the relevant tax laws leave as few loopholes as possible for evasion or avoidance of taxes. In regard to taxation of corporate incomes, a number of tax incentives and concessions are at present being given for investment. These have contributed in no small measure to high levels of private investment over the last five years. These incentives and concessions will need to be kept under continuous review so as to ensure that their benefit accrues to types of investment that have a high priority in the Plan. It becomes particularly important when these concessions are being given that the expense accounts of companies are carefully scrutinised and suitable provisions made in the



tax laws to ensure that wasteful expenditures are kept down, if not eliminated.

32. The Third Plan will involve a substantial increase in indirect taxation. The number of assesseees paying direct taxes in India is very small. Although collections of direct taxes are expected to improve in the course of the Third Plan, the total of resources required cannot be raised without taxing consumption through indirect taxation over a wide range. In some cases, such taxation may be most effective at the point of final consumption; in other cases intermediate products or raw materials may be found more suitable. Indirect taxation along these lines tends to raise the price to be paid by the domestic consumer. This is a sacrifice that has to be accepted as part of the Plan. It should also not be forgotten that if taxation is insufficient, the benefit is likely to accrue to middlemen and traders in the shape of undue profits. Some of these indirect taxes affect the poorer classes but a great many fall on those who have comparatively high incomes. There is, in other words, an element of progression even in indirect taxes. There is, however, no escape from the fact, that in a country like India where the bulk of the people are poor, resources on an adequate scale cannot be raised without calling for a measure of sacrifice from all classes of the people.

33. A word may finally be said in this context regarding the role of the state governments in raising additional resources through taxation. It is inevitable that the larger part of the additional tax effort has to be put through by the Central Government but it is no less important that the State Governments also raise an adequate share for themselves. Taxation of the rural sector falls largely within their field. They have also to mobilise more effectively the elastic sources of revenue such as sales taxes. The collections under this head have improved noticeably in recent years but discussions with several States indicate that there is considerable scope still for a tightening of administration in this respect. On present estimates, the States have to raise about Rs. 610 crores out of the additional taxation target of Rs. 1710 crores envisaged for the Third Plan. The additional taxation by the States in 1961-62 has been below expectations. It will be essential to make up for this in the coming years. Effort will also be necessary in respect of public undertakings of State Governments to enlarge their surpluses.

#### PRIVATE INVESTMENT

34. From the point of view of resources to be raised, the investment programmes of the public and private sectors have to be viewed together, as both draw upon the same pool of savings. The question, in other words, is whether if the public investment programme is to be financed along the lines indicated above, the private sector will be able

to find adequate resources for carrying through the programmes for which responsibility has been placed on it in the Plan. The question could be put the other way also: given the investment programmes in the private sector, will the public sector be able to raise enough resources to cover its needs? The answer to these questions depends obviously on the estimates that can be made regarding the growth of savings in the aggregate and the adequacy of techniques for channelling them. A great deal depends upon the rate at which total output increases and the adequacy of the various constraints envisaged on consumption. Since data in respect of investment and savings over a considerable part of the economy are inadequate it is not possible to attempt any very precise estimates regarding the sources and uses of funds for private investment. But, broadly speaking, considering the trends in the Second Plan period, and on a view of the likely trends in the course of the Third Plan, it is felt that a total of Rs. 4300 crores by way of private investment can probably be financed, consistently with the public sector claims on savings.

35. The following Table sets out the likely levels of investment in the private sector over the Third Plan period under major heads as compared to the initial estimates of the Second Plan and the estimates of investment as now revised in the light of subsequent studies:

Table 5: Investment in the private sector\*

group	(Rs. crores)		
	Second Plan original estimates	revised estimates	Third Plan estimates
1 agriculture (including irrigation) . . . . .	275	675	850
2 power . . . . .	40	40	50
3 transport . . . . .	85	135	250
4 village and small industries . . . . .	100	225	325
5 large and medium industries and minerals . . . . .	575	725**	1100**
6 housing and other construction . . . . .	925	1000	1125
7 inventories . . . . .	400	500	600
total . . . . .	2400	3300	4300

It must be emphasized that the estimates given above are exceedingly rough. The improvement in the total of private investment in the Second Plan as compared to the original estimate is in large part due

\*These figures represent aggregate investment in the private sector including that financed out of resources transferred from the public sector.

\*\*These figures do not include investment by way of modernisation and replacement.

to a change in the basis of estimation in the light of later data. For the Third Plan, a substantial step up is envisaged in the field of industry, large as well as small scale, and transport, the total under these heads rising from Rs. 1085 crores to Rs. 1675 crores. The increases envisaged in agriculture, and housing and other construction are moderate and should pose no serious problem, especially as investment in these sectors is largely self-financed. The financial resources required for the investment programmes for large and medium industries and in the field of minerals are large. Broad estimates regarding the financing of investments in these fields are given in Chapter XXVI. While the total requirements of capital for new investment as well as modernization and replacement in industry and mining come to Rs. 1350-1400 crores, the resources available would appear to be somewhat short relatively to needs. On this basis some of the programmes in this sector may probably spill over into the Fourth Plan, specially since they require foreign exchange.

36. Of the total investment of over Rs. 4300 crores in the private sector, Rs. 200 crores will be provided by way of transfer of resources from the public sector. The assistance by the Reserve Bank to agriculture, small-scale industries and cooperatives will also be on a larger scale. External assistance to the private sector may be of the order of Rs. 300 crores. Investment in the private sector during the Second Plan has been at high levels and there is evidence of greater readiness on the part of private enterprise to avail itself of the opportunities being created by the development process. Investment in the private sector of the order of Rs. 4300 crores appears by no means difficult of achievement. Some of the estimates given in the table above, such as on housing and other construction and transport may well be exceeded. Investment in agriculture depends partly on savings in the rural sector itself and partly on the assistance available to agriculture from Government and cooperative agencies. Considering the increase in agricultural production envisaged in the Plan it would probably be desirable to let investment in agriculture exceed substantially the figure shown in the Table. Although, as stated earlier, all investment is in a sense financed from a common pool of savings, it has to be recognised that some savings flow in particular directions only. For example, the farmer or the small artisan is apt to save if he is investing in his own farm or workshop. The decisions to invest and save are thus inter-linked. The same is true to an extent of housing. If investment of this type were to be reduced, there would probably be less savings. However, it has to be recognized that in a planned economy private investment, specially investment that draws on the organized capital market, has to be regulated with due regard to the limitation of aggregate resources for investment and the requirements of the public sector.

## EXTERNAL RESOURCES

The problem of external resources is a difficult one for a country in its early stages of industrialisation. With the best effort it can make to enlarge its foreign exchange earnings, it cannot for a number of years cope with the increasing import requirements of the economy. Shortfall in internal resources can, to an extent, be met by letting the economy operate under some strain. Foreign exchange is, however, a scarce resource which has either to be earned by larger exports or to be secured through an inflow of external resources. There was a strain on India's balance of payments in the First Plan period, foreign exchange reserves fell sharply by Rs. 481 crores in the first years of the Second Plan. There has been a further drawing down of these reserves in the subsequent years, and the Third Plan commences at a level of reserves that cannot bear any significant further decline.

The Third Plan has been formulated on the basis that it would be advantageous from the point of view of the recipient country as well as the donor countries to plan for substantial amounts of external finance for a relatively short period rather than to proceed in terms of varying and uncertain amounts of assistance over an indefinite period. Development effort in India over the Third and Fourth Plans has to concentrate on expansion of capital goods and machine building industries—together with corresponding development of mining, power and transport—on a scale that would enable the country to build up in this period sufficient capacity to produce domestically the bulk of the capital goods and machinery that it will require in subsequent periods for mounting high levels of investment. This is a priority that follows directly from the objective of maximising the rate of growth of the economy as from the need to attain a viable external accounts position in a foreseeable future. It is evident in this context that the foreign exchange requirements—and the requirements of external assistance—in the Third Plan will be substantial.

## BALANCE OF PAYMENTS : FIRST AND SECOND PLANS

9. The First Five Year Plan was directed mainly towards increasing agricultural production and strengthening the economic overheads of development, like irrigation, power and transport. In the field of industry the stress was mainly on utilisation of existing capacity more fully; industrial sector investment in industry and mining was only a small proportion of the total. The direct foreign exchange component of the First Plan was about Rs. 400 crores. In 1951-52, the first year of the Second Plan, there was a balance of payments deficit of Rs. 234 crores, but the position improved substantially in the subsequent years because of the increase in agricultural as well as industrial production. The deficit in

the balance of payments over the Plan period as a whole was Rs. 318 crores. Of this, Rs. 196 crores was financed by external assistance and Rs. 122 crores by a draft on foreign exchange reserves.

40. The following table shows the balance of payments position for the Second Plan period (figures for 1960-61 are subject to revision).

Table 6: India's balance of payments: Second Plan

items	(Rs. crores)					
	1956-57	1957-58	1958-59	1959-60	1960-61 (preliminary)	total Second Plan 1956-61
1 exports . . .	635	594	576	623	625	3053
2 imports . . .	1099	1233	1030	923	1075	5360
3 trade balance . .	-464	-639	-454	-300	-450	-2307
4 invisibles (net) (excluding official donations) . . .	111	102	81	71	55	420
5 current account (net) . . .	-353	-537	-373	-229	-395	-1887
6 capital transactions (net) (excluding official loans)	-36	-23	-10	-58	-45	-172
7 overall balance . .	-389	-560	-383	-287	-440	-2059
financed by						
A external assistance (including PL. 480 and 665 assistance)	113	265	341	295	392	1406
B IMF drawings (net) . . .	55	35	..	-24	-11	55
C use of foreign exchange reserves . . .	221	260	42	16	59	598
total . . .	389	560	383	287	440	2059

The balance of payments deficit over the five year period is estimated at about Rs. 2100 crores as compared to the Plan estimate of Rs. 1100 crores. The external accounts came under heavy pressure soon after the Plan commenced, and the foreign exchange resources declined by Rs. 481 crores within a period of two years. A re-appraisal of the economic situation in 1958 led to the decision to scale down the Plan somewhat and to concentrate on "core" projects. The total external assistance utilised for the Plan has turned out to be more than 50 per cent over the level that was originally envisaged. The drawing down of foreign exchange resources amounted to Rs. 600 crores, as compared to the Plan estimate of Rs. 200 crores.

41. The adverse foreign exchange situation that developed during the Second Plan was due partly to underestimation of the direct foreign exchange requirements of the Plan and partly to failure to take into account sufficiently the growing import needs of a developing economy. The sharp rise in the tempo of private investment in the early stages of the Plan also contributed to the difficulties, although this probably affected the timings of deficits rather than their total over the Plan period. The difficulties arising from these shortcomings in planning were aggravated by two bad agricultural seasons during the Plan period. Food imports provided for in the balance of payments estimates for the Plan were 6 million tons. Actual food imports over the Plan period have been about 20 million tons. Imports of raw cotton have also been on a substantial scale. However, since the emergence of the foreign exchange crisis a stringent import policy has been followed. A rigorous system of exchange allocations on a half-yearly basis has been adopted and no significant fresh commitments have been made unless they were covered by external assistance.

#### FOREIGN EXCHANGE REQUIREMENTS OF THE THIRD PLAN

42. The estimates of balance of payments trends over a five year period inevitably present difficulties and must be regarded only as the best judgment that can be formed at this particular stage in the light of the available data. The Draft Outline of the Third Plan presented in June 1960 estimated export receipts at Rs. 3450 crores over the five-year period. The net receipts on invisibles were estimated at Rs. 120 crores. These total receipts would, it was suggested, be matched by payments in respect of maintenance imports totalling also Rs. 3570 crores. On this basis the requirements of external assistance for the Third Plan added up to Rs. 2600 crores as follows:

	(Rs. crores)
1 payments for imports of capital goods and equipment required for Plan Projects . . . . .	1900
2 components, balancing equipment, etc. for increasing the production of capital goods . . . . .	200
3 re-financing of maturing obligations . . . . .	500
total . . . . .	2600

This total was exclusive of P.L. 480 imports. Taking into account the agreement entered into a month earlier with the United States for import of foodgrains valued at about Rs. 600 crores, the balance of payments gap for the Plan period was estimated at Rs. 3200 crores.

43. These estimates have been gone over again in recent months. The total investment envisaged in the Third Plan is reckoned at Rs. 10,400 crores and its direct foreign exchange requirements are estimated at

Rs. 2030 crores. As explained earlier, investment in the public sector is being taken at Rs. 6100 crores—this corresponds to the outlay of Rs. 7500 crores—and that in the private sector at Rs. 4300 crores. The foreign exchange requirements for these investment programmes are shown in the table below:—

Table 7: Investment and foreign exchange requirement: Third Plan

head	(Rs. crores)	
	total investment	foreign exchange
A public sector		
1 agriculture and community development . . . . .	610	30
2 major and medium irrigation . . . . .	650	50
3 power . . . . .	1012	320
4 village and small industries . . . . .	100	20
5 large and medium industries and minerals (including oil) . . . . .	1470	690
6 transport and communications . . . . .	1486	320
7 social services and miscellaneous. . . . .	572	90
8 inventories . . . . .	200	*
total (public sector) . . . . .	6100	1520
B private sector		
1 large and medium industries, minerals and transport . . . . .	1350	495
2 villages and small industries . . . . .	325	15
3 others . . . . .	2625	Neg.
total (private sector) . . . . .	4300	510
C grand total (A+B) . . . . .	12400	2030

44. In addition to these import requirements related to Plan projects, there are the general needs of the economy by way of raw materials, components, replacement machinery, etc., to be provided for. In the estimates that follow a provision of Rs. 3650 crores has been indicated for such imports. This is Rs. 80 crores more than the provision in the Draft Outline. Actually, the needs are larger; an estimate of Rs. 3800 crores over the five-year period would not be too high. Nevertheless, it is not possible at this stage to provide more resources for this purpose. This means that some under-utilisation of capacity will have to be tolerated.

\* Foreign exchange component of 'inventories' is included under other heads.

45. Maintenance imports for 1961-62 are estimated at Rs. 746 crores. They will decline in the latter part of the Plan as the production of raw cotton, iron and steel, aluminium, industrial machinery and transport equipment, chemical intermediates, etc. increases progressively in the course of the Plan. These increases in domestic output will result in some savings in imports, but these will in part be counter-balanced by increased requirements in certain other lines.

46. The provision of Rs. 200 crores suggested in the Draft Outline for the import of components and other intermediate products needed to increase the output of machinery and transport equipment for the investment programmes included in the Plan is being retained. It should be emphasised in this context that the dividing line between maintenance and developmental imports is by no means clear-cut. The provision of Rs. 200 crores mentioned above is meant primarily to highlight the fact that the execution of Plan projects requires the import not only of complete machines but also of materials to fabricate equipment in the country. The components and intermediate products of various kinds required for maintaining the production of capital goods at full capacity level add up to a much higher figure, and these requirements will grow as machine-building capacity develops. On a broader view, many of the other maintenance imports included in the estimate of Rs. 3650 crores are also to be used to increase the output of capital goods. For example, a major use of non-ferrous metals is the manufacture of cables to form part of electrical transmission systems, and the bulk of the estimated consumption of steel will go into construction and the fabrication of capital equipment. Foreign assistance for financing such imports thus contributes as directly for the fulfilment of the Plan as imports of machinery and equipment and, it is, indeed vital that a part of the total assistance for the Plan is secured in the form of such "non-project" imports.

47. It has been evident for some time past that a greatly intensified export effort is essential if the country is to be in a position to meet its growing import requirements and to move forward progressively towards a balance in external accounts. The objective, as mentioned earlier, is to ensure that the economy is able to earn enough by way of exports so that it can, after a period of ten years or so, reduce substantially the dependence on assistance from abroad. Considerable stress has been laid on export promotion for the last two or three years. What is needed now is a clear acceptance of the sacrifices involved and sustained follow-up action with a view to getting results on a scale that is commensurate with needs. The lines along which this intensified effort is to be directed and the measures needed for improving on export performance have been indicated in another chapter.



48. Some other items in the balance of payments have also been re-estimated in the light of later data. The following Table sets forth the balance of payments estimates for the Third Plan as they now emerge:

Table 8: Financing of foreign exchange requirements for the Third Plan  
(Rs. crores)

item	total Second Plan	total Third Plan	1961-62	annual average Third Plan
<b>A Receipt</b>				
1 exports . . . . .	3053	3700	667	740
2 invisibles (net) (excluding official dona- tions) . . . . .	420*	nil	22	nil
3 capital transactions (net) (excluding receipts of official loans and private foreign investment)	-172	-550	-133	-110
4 external assistance . . . . .	927@	2600	575**	520
5 draft on foreign exchange reserves . . . . .	598	nil	nil	nil
total (1 to 5)***	4826	5750	1131	1150
<b>B Payment</b>				
1 imports of machinery and equipment for Plan projects	4826	1900	325	380
2 components, intermediate products etc. for raising production of capital goods		200	60	40
3 maintenance imports		3650	746	730
total (1 to 3)***	4826	5750	1131	1150

49. It will be seen from the above that the total receipts from exports during the Third Plan period are now being taken at Rs. 3700 crores as compared to the actual receipts of Rs. 3053 crores during the Second Plan period and the estimate of Rs. 3450 crores given in the Draft Outline. During the last few months further studies have been made of the import requirements of the economy and the steps necessary to meet them. It is clear that without a substantial move forward on exports, further progress of the economy will be seriously jeopardised. The estimate of Rs. 3700 crores shown in the Table is the minimum to be aimed at; the needs of the situation are, in fact, larger. Exports, however, take time to grow and it is not possible to estimate precisely what level of earnings is, in fact, likely to materialise over the five year period. The estimate of Rs. 3700 crores has been worked out on the basis of a study of the export possibility in respect of all major commodities, and the

\*Includes reimbursements from the U.S.A. for freight expenses on P.L. 480 imports initially incurred by India.

\*\*Represents external assistance required for financing imports as shown below.

@Including net drawings on the I.M.F.

\*\*\*P.L. 480 imports are excluded from both sides—about Rs. 534 crores for the Second Plan and Rs. 600 crores for the Third Plan.

fullest effort must be made to realise this target. The trends in exports should be kept under review at the highest level throughout the period of the Plan and all steps taken to ensure that export earnings are maximised. Two points need to be emphasised in this context. Firstly, while increased production will help in enlarging the surpluses available for export, foreign exchange earnings have at the present juncture to be increased even by sacrifice of domestic consumption. Secondly, exports will flow only to the extent that the prices of our products are competitive. It will be essential in the coming years not only to restrain consumption in the interest of exports, but also to increase productivity and to keep down costs.

50. Over the last five years net receipts from invisibles have shown a falling trend—from Rs. 111 crores in 1956-57 to Rs. 71 crores in 1959-60. The estimated net receipts for 1960-61 come to Rs. 55 crores. The falling trend reflects the increasing payments of interest and dividend on the one hand and the declining receipts from foreign exchange holdings abroad. In the Third Plan period some improvement in gross receipts, particularly under foreign travel, transportation and insurance, is expected. This improvement will, however, be more than offset by the increase in interest liabilities on account both of the Second and the Third Plan loans. Provision has also to be made for the payment of 50 per cent of the freight on P.L. 480 imports. For 1961-62 a surplus of Rs. 22 crores on invisibles is estimated. This will, however, fall progressively in the subsequent years, so that over the five-year period, the receipts and payments in respect of invisibles will more or less balance.

51. The repayments of loans and credits falling due within the Third Plan period total Rs. 450 crores. Other capital transactions are estimated to involve a net outflow of Rs. 41 crores. The payments to Pakistan under the Indus Water Treaty agreement and to Kuwait for the return of Indian currency call for further foreign exchange resources amounting to Rs. 59 crores. The total provision required for capital repayments in the period of the Third Plan thus comes to Rs. 550 crores.

52. What emerges on the whole is that the balance of payments position will continue under strain and that the external account will barely balance even with exports of the order of Rs. 3700 crores. This target of exports is by no means easy of achievement. It postulates fairly favourable conditions abroad, and an overriding priority to exports in domestic policy decisions. It must be stressed in this connection that the import requirements of machinery and equipment for the Plan are higher by Rs. 130 crores—Rs. 2030 crores as compared to the earlier estimate of Rs. 1900 crores. In presenting the estimates in the Table above, it has been assumed that payments out of external assistance for such imports will be limited to the total of Rs. 1900 crores. This means that effort will have to be made to finance the balance by increased export

earnings even beyond the level indicated in the Table. The total external assistance for the Third Plan is being taken at Rs. 2600 crores as in the Draft Outline. This is exclusive of P.L. 480 imports. Since, as stated above, the balance of payments position will continue to be a difficult one, it will be essential in the Third Plan period to continue the system of foreign exchange budgeting and allocations in all its rigour. It is evident that in the coming years the scope for licensing new industrial capacity for which there is no provision in the Plan will, at best, be strictly limited. Even in cases where imports of plant and equipment can be financed from external resources, the point to consider would be whether the related imports of raw materials, components, spares, etc. can be provided for. Any revision of the industrial targets in the Plan would, in other words, have to be considered from all aspects, including availability of foreign exchange of complementary domestic resources, and of adequate transport, power and technical personnel.

53. India received valuable assistance towards the Second Plan from the International Bank of Reconstruction and Development and a number of friendly countries. Early in 1960 the Bank sent out a Mission of three eminent bankers to study India's developmental problems and requirements. The report of the Mission indicated, *inter alia*, the broad lines along which resources from abroad could assist in the furtherance of the tasks envisaged in the Third Plan. Thereafter, an expert mission from the Bank visited the country and made a detailed, technical study of the Plan, including its foreign exchange aspects. There has been for some time past general recognition abroad that developmental assistance to be most effective and fruitful has to be made available on an assured basis over a number of years; that it has to take into account not merely the requirements of particular projects but of the developmental programme as a whole; and that the terms of repayment have to be adjusted to the anticipated growth in the recipient country's capacity to create the necessary export surplus. These tasks, obviously require concerted action on the part of industrialised countries, including the international agencies concerned.

54. Over the past year or so, several meetings have taken place under the sponsorship of the International Bank of Reconstruction and Development of the Consortium of friendly countries interested in India's economic development, and it is gratifying to note that at the last meeting of the Consortium held from May 31 to June 2, 1961, India has been assured of assistance totalling \$ 2286 million (Rs. 1089 crores) in order both to provide immediate support to her balance of payments and to cover mainly the import orders to be placed during 1961-62 and 1962-63. The United States has agreed to provide the largest share amounting to just under 50 per cent of the total (\$ 1045 million). This is in addition to the P.L. 480 commodity assistance of about \$ 1300 million in respect of which agreements were signed earlier. The other

members of the Consortium have offered assistance to India totalling \$ 1241 million (Rs. 591 crores) mostly to cover commitments in the first two years of the Third Plan; West Germany, \$ 425 million; the U.K., \$ 250 million; Japan, \$ 80 million; Canada \$ 56 million; France, \$ 30 million; and the International Bank together with the International Development Association, \$ 400 million. The U.S.S.R. had already authorised earlier two credits amounting to Rs. 238 crores for use on Third Plan projects. A number of other friendly countries, namely, Czechoslovakia, Yugoslavia, Poland and Switzerland, have also extended credits totalling Rs. 67 crores for projects in the Third Plan.

55. The carry-over of total assistance available from the authorisations of the Second Plan is of the order of Rs. 365 crores. This, together with the fresh assistance mentioned above, gives the Third Plan a good start. Further meetings of the Consortium are envisaged for reviewing the progress of the Third Plan and for considering India's further requirements for the Plan. Some countries, not yet members of the Consortium, have also expressed interest in India's Plans. These developments in the field of external assistance are highly encouraging; they represent a bold and cooperative approach to the problem of assisting development in the under-developed parts of the world. They highlight correspondingly the need for maximum effort on our part to mobilise domestic resources with the utmost vigour, and to ensure in every possible way that the assistance that is available is utilised without delay and to the fullest benefit of the economy. It is also vital in this context that the utmost possible effort should be made to increase exports on a continuing and progressive scale. It is hoped that the industrialised countries will on their part assist by removing such restrictions as may at present exist on imports from developing countries.

56. The balance of payments difficulties that the country is facing are, it must be stressed, not short-term or temporary; they will continue for several years to come. External assistance is essential for this period, but the aim must be to make the economy more and more self-reliant, so that it is able to support within a period of ten or twelve years an adequate scale of investment from its own production and savings. Normal inflows of foreign capital may continue but reliance on special forms of external assistance has to be reduced progressively and eliminated. The Third Plan represents a crucial stage in this process.

### CONCLUSIONS

57. The resources position for the Third Plan, it may be stressed, in conclusion, is inevitably a strained one. The development effort to be undertaken has to be commensurate with the need to ensure a satisfactory rate of growth in national income and in productive capacity. The

process of transformation of a stagnant economy commenced in the First Plan and accelerated in the Second Plan has to be carried forward further with even greater speed. The recent population trend as revealed by the census makes the task for the next ten or fifteen years more arduous. It is essential in this situation to call for the maximum effort and sacrifice the community is capable of.

58. The financial ceiling of Rs. 7500 crores that has been accepted for the public sector programmes is not to be interpreted as indicating the limit of possibilities in this regard. As stated earlier, the lines along which savings can be enlarged progressively during the Third Plan period merit intensive and continuous study. There has to be a close scrutiny of all non-Plan expenditures; economies in expenditure, both on Plan and on non-Plan items, can release some resources for financing development. The experience of the Second Plan suggests that the scope for taxation may, in fact, be larger than is foreseen at this stage. Provident funds, extension of life insurance and similar social security schemes to institutionalise savings are a potential source for further resources. There is need for a country wide savings drive, particularly in the rural areas. In the States steps are being taken to place greater responsibilities on local self-governing institutions. Larger resources for development can be mobilized if through these institutions the community is induced to take greater interest and participate in local developmental programmes.

59. The limit to financial resources is never an absolute one; it is related to the quality of effort that is brought to bear on implementation of projects, on garnering of their surpluses, and on prevention, through fiscal and other measures, of leakages of resources into consumption or non-priority investment. Substantial investments have been made in the public sector over the last ten years and every effort must be made to ensure that they yield an adequate surplus on the basis of which to plan further advance. Development has in due course to become self-financing; the surpluses from past investments constitute the source for further development. It is important that in choosing their projects for implementation, the Central as well as State Governments keep constantly in mind the need to get results from these investments as quickly as possible. Even a comparatively small delay in completing a project and putting it into productive use can make a significant difference to the resources available for investment. The point is that as an economy develops, even marginal improvements in planning and execution over a number of points can yield a large return in the aggregate. With adequate attention to these aspects of the problem, resources can be raised beyond the limits that are at present indicated.

60. The problem of resources thus links up with the problem of administrative and organisational efficiency; the quest for additional resources has necessarily to be a continuing one and on this wider plane as well. The crucial tests for the Third Plan are two: (a) the extent to which the production of food and raw materials can be increased—what is needed is a striking advance rather than a varying performance; and (b) the energy and drive that are forthcoming for securing the substantial increases needed in export earnings. Given success in these directions, the present limitations of finance can progressively be overcome.

## ANNEXURE I

## States' resources for the Third Plan

(As on the basis of the discussions held during August–November, 1960)

(Rs. crores)

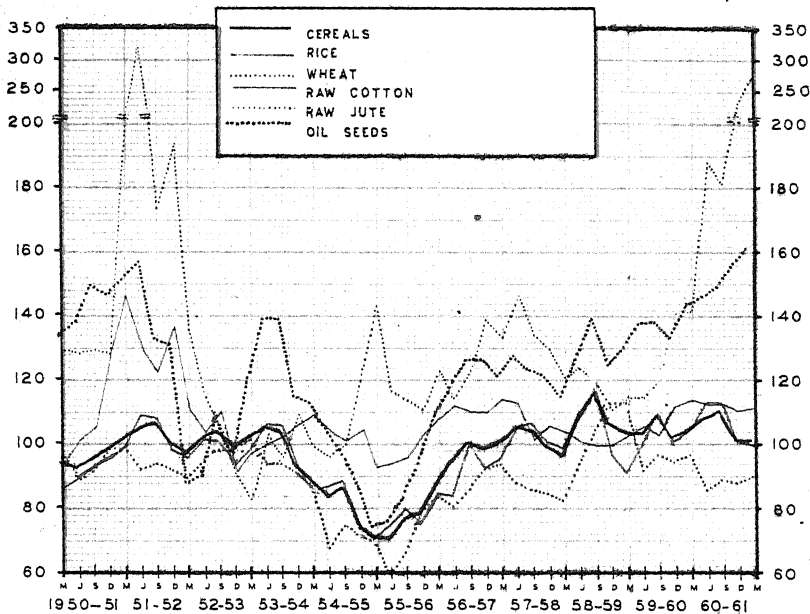
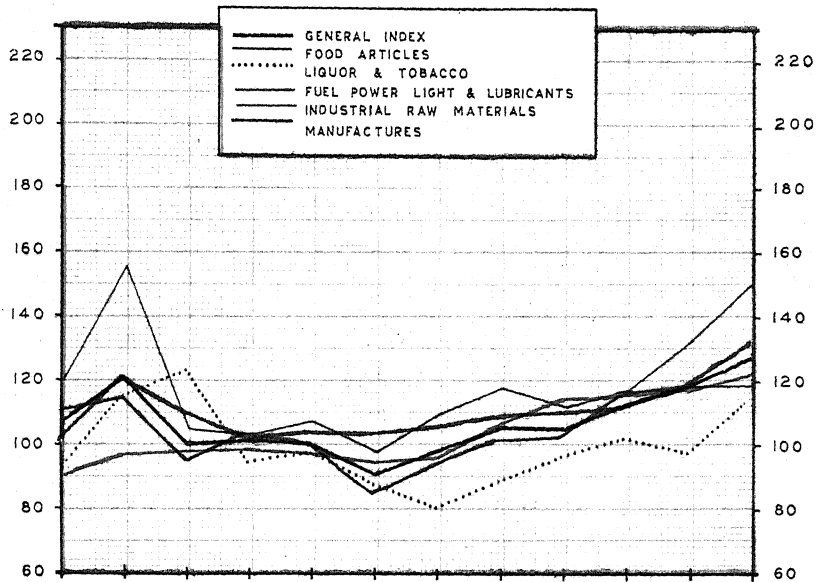
	Andh- ra Pradesh	Assam	Bihar	Guja- rat	Jam- mu & Kashmir	Kerala	Madhya Pradesh	Maharashtra	Mysore	Orissa	Punjab	Rajasthan	Uttar Pradesh	West Bengal	total all States
1 balance from current revenues at 1960-61 rates of taxation	14.8	7.0	19.8	10.2	8.0	10.6	-7.7	-30.2	30.6	9.8	-21.1	14.0	0.5	-43.5	11.3 34.1
2 loans from the public (net)	40.0	9.0	23.0	30.0	..	23.0	25.0	52.9	36.9	-14.7	21.0	16.0	20.0	35.0	27.6 374.17
3 share of small savings	17.5	12.0	42.5	39.2	2.3	8.0	17.0	20.0	66.8	10.0	8.5	35.0	10.0	50.0	38.5 377.3
4 unfunded debt (net)	3.2	2.8	8.0	4.0	1.7	3.0	2.3	5.9	9.0	5.5	1.5	3.9	5.5	17.3	5.5 79.1
5 balance of miscellaneous capital receipts over non-plan disbursements	-29.7	-17.2	-36.6	-6.4	-8.2	-19.2	-1.4	-33.7	15.3	..	-6.7	-28.3	10.0	-30.6	-40.6 -233.3
6 contribution of enterprises	6.2	3.4	12.3	11.0	1.2	9.6	9.8	35.1	9.4	13.0	1.8	16.4	2.0	9.8	7.7 148.7
7 withdrawal from cash and other reserves	..	..	..	5.0	..	..	..	6.0	..	15.0	..	..	..	..	.. 26.0
8 resources without taking into account additional taxation	52.0	17.0	69.0	93.0	5.0	35.0	45.0	56.0	168.0	68.0	5.0	57.0	48.0	38.0	50.0 806.0
9 additional taxation	53.0	16.0	50.0	29.0	8.0	23.0	48.0	45.0	52.0	42.0	23.0	40.0	32.0	109.0	40.0 610.0
10 total resources after taking into account additional taxation	105.0	33.0	119.0	122.0	13.0	58.0	93.0	101.0	220.0	110.0	28.0	97.0	80.0	147.0	90.0* 1416.0

\*Revision of this amount to Rs. 133 crores has been suggested by the State Government.

THIRD FIVE YEAR PLAN

# INDEX OF WHOLESALE PRICES

BASE 1952 - 53 = 100







## CHAPTER VII

### PRICE POLICY FOR THE THIRD PLAN

Price policy in a developing economy has to concentrate on two main objectives: (a) it must ensure that the movements of relative prices accord with the priorities and targets that have been set in the Plan; and (b) it must prevent any considerable rise in prices of essential goods that enter into the consumption of low income groups. Both these aspects were stressed in the First and the Second Plans, and various measures were taken in the course of these Plans to correct or moderate undesirable trends. Prices, however, fluctuated widely in the First Plan period and they have shown a rising trend through the Second Plan period. At the commencement of the Third Plan, the levels of wholesale prices and cost-of-living are already high and it is essential to ensure that there is no accentuation of inflationary pressures in the course of the Third Plan and that the levels of living of the more vulnerable classes in society are safeguarded.

#### PRICES IN THE FIRST PLAN

2. Table 1 on the following page indicates the price trends over the First Plan period. The index of wholesale prices at the end of the Plan was about 22 per cent lower than in March 1951. It must be borne in mind, however, that this is a somewhat misleading comparison as inflationary pressures were at their height in 1951 because of the Korean war. As compared to 1950, the fall in the general index of prices was lower—about 8 per cent; prices of food articles fell by about 14 per cent; some of the other groups such as fuel, power, light and lubricants and manufactures showed a rise. With the end of the Korean war and following the disinflationary fiscal and monetary measures taken by Government in the course of 1951, prices recorded a sharp fall, the index coming down from 125.2 in March 1951 to 99.9 in March 1952. The index was more or less steady around this level for the next two years. The bumper crop of 1953-54 resulted in a sharp fall in prices, especially in the prices of foodgrains; the index for foodgrains came down from 102.2 in March 1953 to 98.6 a year later and further to 82.9 in March 1955. It was in this situation that the ceiling on plan outlays was raised and some purchases of foodgrains were made on government account. By July 1955, a distinctly upward trend in prices was noticed. This trend continued for the rest of the Plan period. The index of wholesale prices in March 1956 was 98.1, i.e., only slightly below the 1952-53 level.

Table 1: Index number of wholesale prices: 1950-1956

(base : 1952-53= 100)

commodity	1950	1951	1952	1953	1954	1955	1956	(March : average of weeks)	
								percentage change in 1956 over 1950	percentage change in 1956 over 1951
<b>I food articles</b>									
cereals	108.3	122.4	93.7	102.2	98.6	82.9	92.8	-14.3	-24.2
pulses	92	100	95	100	88	70	86	-6.5	-14.2
liquor & tobacco	80	102	85	98	71	49	77	-3.8	-24.5
<b>II fuel, power, light and lubricants</b>	91.6	112.9	121.5	92.8	96	86	78.7	-14.1	-30.3
<b>III industrial raw materials</b>	91.1	97.5	98.0	98.0	95.7	96.7	96.8	+6.3	-0.7
raw cotton	119.1	153.7	103.2	101.5	106.2	97.2	109.4	-8.1	-28.8
oil seeds	93	144	109	96	108	92	107.0	+15.0	-25.7
<b>V manufactures</b>	132	149	85	115	109	71	106	-19.7	-28.9
intermediate products	98.9	118.7	107.6	98.9	100.6	101.1	102.9	+4.0	-13.3
finished products	102.1	132.6	108.4	99.0	98.5	97.4	110.5	+8.2	-16.7
<b>all commodities</b>	98.3	116.5	107.5	98.8	101.2	101.7	101.5	+3.4	12.8
	106.4	125.2	99.9	100.8	100.3	90.8	98.1	-7.8	-21.7

3. The all-India working class cost-of-living index (1949=100) was 103 in March 1951. It varied considerably from year to year declining to a level of 94 in March, 1955, but rising again to 100 by the end of the Plan period. Over the five years, the index showed a fall of about 3 per cent, but an upward trend had already started before the First Plan ended, the rise in the index in the twelve months ending March, 1951, being more than 6 per cent.

4. While it is true that the level of prices at the commencement of the First Plan was unduly high and a corrective fall was necessary, there is little doubt that the decline in foodgrains prices that occurred about the middle of the Plan period was excessive and harmful. This downward trend could not be arrested in time because there was considerable doubt for some time as to the appropriate level at which Government ought to buy.

#### PRICES IN THE SECOND PLAN

5. The Second Plan has been characterised by a persistent upward trend in prices though, of course, part of the rise in prices was a corrective to the earlier decline. Over the five-year period, the rise in the general index of wholesale prices has been about 30 per cent; food articles as a group have gone up by some 27 per cent; industrial raw materials by 45 per cent; manufacturers by over 25 per cent. Table 2 on the following page indicates these trends.

6. It will be observed that the index for cereals which was below 100 in March, 1956 rose sharply over the next three years; pulses also showed a similar trend. The index for cereals was back to 100 in March, 1961, that for pulses was 93. It is the rise in the other constituents of 'food articles' that accounts for the continued uptrend in the index for that group. Relative shortage of foodgrains was the major factor accounting for price rises in the early stages of the Second Plan. In the later parts of the Plan period, the leading factor in the upward trend of prices has been shortage of agricultural raw materials. Of the rise of 14 per cent in the index of wholesale prices since March 1959, some two-fifths is attributable to the rise in raw material prices, and another two-fifths was accounted for by the rise in the prices of manufactured goods—partly in consequence of the rise in raw material prices.

Table 2: Index number of wholesale prices: 1956-61

(base : 1952-53 = 100)

commodity	(March : average of weeks)						percentage rise (+) in 1961 as compared to 1956
	1956	1957	1958	1959	1960	1961	
I food articles							
cereals	92.8	102.3	102.3	113.8	117.0	117.6	(+ )26.7
pulses	86	99	95	102	103	100	(+ )16.3
liquor & tobacco	77	84	78	113	90	93	(+ )20.8
III fuel, power, light and lubricants	78.7	87.2	94.9	100.3	96.4	114.2	(+ )45.1
IV industrial raw materials	96.8	106.5	114.5	115.6	117.8	121.3	(+ )25.3
raw cotton	109.4	117.3	111.3	116.2	131.9	159.1	(+ )45.4
oil seeds	107	113	103	102	113	111	(+ )3.8
V manufactures	106	119	113	128	141	150	(+ )50.9
intermediate products	102.9	106.2	107.6	108.2	116.9	129.4	(+ )25.7
finished products	110.5	108.9	106.8	109.4	121.3	137.2	(+ )24.1
all commodities	101.6	105.7	107.7	108.0	116.1	128.1	(+ )26.1
	98.1	105.6	105.4	112.3	118.9	127.5	(+ )30.0

7. The major explanation of the continued uptrend in wholesale prices in the Second Plan period is undoubtedly the rising pressure of demand resulting from the growth of population and of money incomes. Supply factors have also played their part from time to time. In 1957-58, the production of foodgrains was 6 million tons less than in the previous year. In 1959-60, again, foodgrains production was about 4 million tons less than in the previous year. The output of cotton in that year was 18 per cent below that in the previous year; that of jute was 12 per cent lower and that of oilseeds was short by about 8 per cent. These shortfalls and fluctuations in agricultural production have reacted adversely on the price level as a whole. The level of foodgrains prices at the end of the Second Plan cannot be considered too high, but it has to be recognised that there have been large fluctuations in these prices in the course of the Second Plan period; in fact, if one compares the average level of cereal prices in 1960-61 with that in 1955-56, the rise was as large as 37 per cent. The relative stability of foodgrains prices latterly has been due largely to P.L. 480 imports.

8. As in the case of wholesale prices, the trend of the working class cost-of-living index was upward all through the Second Plan period. The index (1949=100) rose from 100 at the commencement of the Second Plan to 124 by the close of the Plan. In the earlier part of the Plan, the rise in the index was mainly because of the increase in foodgrains prices. The relative stability in these prices in the last two years has not, however, kept the cost-of-living from going up. This is because items other than foodgrains in the food group and several other elements in the cost-of-living have recorded an increase.

9. The experience of the Second Plan period reinforces the point that given a substantial investment programme, the degree to which prices can be kept relatively steady depends vitally on how far agricultural production, that is, the production of food as well as raw materials, can be increased. Industry, mining and transport have to develop rapidly if an adequate rate of growth of the economy is to be achieved. But, all this development must rest on the foundation of a more efficient and progressive agriculture. It follows that since agricultural output is subject to the vagaries of the monsoon, a programme of rapid industrialisation can be carried through without creating economic instability only if there are adequate stocks with Government to meet these periodical shortages. Moreover, agricultural prices are subject to large seasonal and regional variations, which are often aggravated by speculative hoarding. These variations have also to be moderated through judicious purchases and sales by Government.

#### OUTLOOK FOR THE THIRD PLAN

10. The question now is as to the outlook in respect of prices for the Third Plan. Clearly, the pull of demand factors in a growing

economy must necessarily be upward. The Plan envisages a step-up in investment from the current level of 11 per cent to about 14 per cent by the end of the five year period. This will generate money incomes against which there must be an additional supply of goods. The increased volume of investment will have to be financed by fiscal measures which will involve selective price rises. The Plan postulates a large increase in savings. External assistance of a substantial order is envisaged, but it will be essential to secure an increase in domestic savings from the present level of 8.5 per cent to about 11.5 per cent in the course of the next five years. This cannot be achieved if all types of consumer demands have to be met; less essential consumption will have to be restrained so as to release resources for the investment programmes in the Plan. Moreover, the situation in respect of foreign exchange reserves is much more difficult than in the Second Plan. A part of the inflationary pressures generated by the growth of investment in the Second Plan was neutralised by the drawing down of foreign exchange reserves. This moderating factor is not available for the Third Plan. In fact, the Third Plan calls for the fullest effort to raise exports. This would tend to raise the prices of exportable commodities for the domestic consumer.

11. As to the supply side, the Plan targets for production of the basic essentials of consumption and of raw materials have been fixed on a careful examination of the likely requirements both for domestic consumption and for exports. The output of foodgrains is to be increased by over 30 per cent so as not only to meet the increase in demand because of the growth of population and incomes but also to cover the present deficit which is being met through imports. The increases in the production of rice and wheat have been planned at a higher rate to take into account the tendency for substituting superior for inferior grains as incomes rise. Production of cotton is planned to increase by 37 per cent, that of oilseeds by 38 per cent and that of sugar by 25 per cent. Provision has been made for an increase in per capita consumption of cloth from 15.5 yards in 1960-61 to 17.2 yards in 1965-66. The output of cloth from mills, powerlooms and handlooms is scheduled to go up by 25 per cent. The increase in national income that is envisaged during the Plan period leaves scope for moderate increases in per capita consumption despite the proposed step-up in investment. The fact that at the beginning of the Third Plan Government have in hand about 2.8 million tons of foodgrains and that about 14.4 million (metric) tons of wheat are expected in the next few years under P.L. 480 gives reasonable assurance that the price of wheat—and to an extent of foodgrains as a group—will not rise significantly in the next few years if the monsoons do not misbehave seriously.

12. The production potential of the country has been strengthened considerably in the last few years, both in agriculture and in industry.

The Third Plan envisages a substantial increase in the availability of fertilisers. The delays in utilisation of irrigation facilities are being reduced. Industrial production has risen impressively in recent years and, although difficulties in respect of imported raw materials and components will continue, the outlook for the Plan period is, on the whole, promising. The scheme for mobilising the financial resources required for the Plan proposes deficit financing on a strictly limited scale; every effort will be made to restrict the increase in money supply both on account of Government and of the private sector to the genuine requirements of production. Thus, the Plan has been formulated with due regard to the need for minimising inflationary pressures and for keeping a balance between the growth of essential demands and the availability of supplies to match them.

13. These balances and safeguards notwithstanding, the possibilities of significant—and even disturbing—price rises cannot be entirely eliminated. Firstly, there is the usual un-certainty in regard to monsoons. A five per cent shortfall in agricultural output in a single year can reduce the marketable surpluses substantially and raise prices more than proportionately. Secondly, the various restraints on consumption implicit in the Plan may not always operate to the full extent, so that a situation of excess demands may well persist over a part of the Plan period. Thirdly, while the Plan envisages a certain balance between the rates of growth in various sectors, some imbalance is almost certain to appear from time to time; investments and outputs in various lines cannot, in actual practice, be phased out with precision; there might well be 'lags' in the system at various stages.

14. There is, then, no doubt that it will be necessary during the Third Plan to keep a close watch on prices, especially on prices of essential commodities, and to be prepared in advance with a strategy for corrective action before difficulties actually become acute. By and large, what has to be guarded against is an upsurge of inflationary pressures, although a situation of relative abundance in respect of some commodities with consequential price falls can emerge from time to time. Measures to counteract both types of trends have to be kept in readiness. Even apart from any persistent price rises or falls, large seasonal fluctuations and regional price disparities will call for corrective action. Stable and reasonable prices for what the farmer produces are likely to provide him a better incentive than high but fluctuating and uncertain prices.

#### SCOPE AND LIMITS OF PRICE POLICY

15. It must be stressed that price policy has to be viewed as one aspect of overall economic policy; the question is not merely what can or ought to be done in respect of particular prices. The level and



structure of prices are related to a number of basic economic decisions, some of which are taken by Government, but others rest with the producers, consumers and investors who are widely scattered and act in terms of the prospects of economic gain to themselves. A plan tries to bring these related decisions into a common focus, but there are limits to which the course of prices can be altered in the short run. Each major policy decision, such as what scale of investment to undertake, what priority to give to short-term quick-maturing investments, the choice between alternative modes of raising the resources required, raising or lowering of export quotas—all these carry with them certain implicit decisions as to the course of prices. Given these decisions, it must be recognised that the scope for altering the structure of prices is by no means unlimited.

16. Certain upward pressures on prices are implicit in development and they have to be accepted. The process of stepping up investment involves creation of money incomes ahead of the availability of goods and services. Investment adds to real national product after a time, and certain types of investment take a longer time to mature than certain others. The larger the investment effort, the greater is the upward pressure on prices. Similarly, the more long-maturing the projects undertaken, the greater is the resultant strain on the system. The substantial transfer of manpower and other resources to new uses involves payment of larger monetary rewards. This also is a significant inflationary factor.

17. There are, on the other hand, factors that tend to moderate these upward pressures. To the extent that there are unused resources that can be drawn upon and in so far as in certain sectors such as agriculture, an increase in production could be secured quickly with comparatively small investment, the expansionary pressures just mentioned may be softened. Then, again, some of the investment made earlier add to current output, and as the level of technology and organisational efficiency improve, relatively large increases in output could be secured without a proportionate increase in costs. Factors such as these have, in favourable circumstances, made it possible for certain countries to achieve high rates of growth with a fair degree of price stability. Given the requisite production and savings effort backed by an appropriate price policy, the expansionary pressures generated by development can successfully be controlled.

18. The balance between the expansionary and the moderating factors mentioned above tends, however, to be shifting and uncertain. An under-developed economy has to step up investments continually over a period of years and has to convert a growing proportion of unskilled rural labour into skilled workers and technicians. Various bottlenecks arise in this process of adaptation. Since the real resources needed have to be mobi-

lised through monetary incentives, and a fairly high degree of profitability secured for those sectors of the economy which have to be expanded more rapidly, it is essential to be prepared for a moderate rise in the price level, while directing every effort possible towards preventing a rise in the prices of essential commodities.

19. And yet, the dangers of continued or excessive price rises are obvious. If the financial outlays in the Plan are realised only at higher prices, the real content of the Plan gets correspondingly reduced. An inflationary situation is not conducive to the most efficient use of resources. It distorts relative prices and tends to move resources away from the uses that have higher priority from a social point of view. The fixed income earners, among whom are some of the most vulnerable classes in society, cannot be expected to put up too long with an erosion of their real standard of living, and yet, if money incomes are increased over a wide sector, the result can only be to give a further twist to the inflationary spiral. The problem, then, is one of drawing the right line between too much intervention and too little, and of devising appropriate techniques of controls and regulation at certain vital points in the system.

#### CONSTITUENTS OF PRICE POLICY

20. A major constituent of price policy in this situation is fiscal and monetary discipline. Fiscal policy must be directed to mopping up the excess purchasing power which tends to push up demands above the level of available supplies. The quantum of taxation must, in other words, be adequate to keep down consumption to the limits provided for in the Plan. The requirements of the public sector investment programme must be met by the transfer of real resources from the public rather than by creation of fresh purchasing power. In other words, fiscal policy in all its aspects must aim at restraining consumption and mobilising savings more effectively.

21. A word may be said in this context regarding the price policy of public enterprises. These enterprises have an important role in enlarging public savings. They must, therefore, operate at a profit and maintain the high standard of efficiency required for this purpose. Their price policy should be such as would secure an adequate return on the investment made from public funds.

22. Monetary policy has to go hand in hand with fiscal policy. Just as the latter has to avoid the creation of excess purchasing power through government operations, the former has to regulate the pace of credit creation through banks. The credit needs of a developing economy are continually on the increase and have to be provided for. Care must, however, be taken to see that the scale and pace of developments in the private sector do not go out of line with those envisaged in the Plan and

thereby exert undue pressure on the limited resources available for investment. Speculative holding of commodities and accumulation of inventories need particularly to be discouraged. The policy of selective credit control followed hitherto by the Reserve Bank has latterly been supplemented by measures designed to restrict aggregate credit creation by the banks. Interest rates have gone up, and although the bank rate has not been raised, a system of penal rates on borrowings by banks beyond defined limits has been instituted by the Reserve Bank. Details of monetary management apart, the fact has to be recognised that capital in India is very scarce relatively to the demands for it, and that in the long run interest of the economy, the price to be paid for it should, save in special cases, reflect real costs. This is important both for assessing the priority to be accorded to various projects in the Plan and for determining the prices of the products or services emanating from these projects.

23. Commercial policy can also be used to an extent for overcoming domestic shortages, but since the need for several years to come is to economise on imports and to increase exports, the pressure will continually be towards an increase in domestic prices. In fact, considering the need to enlarge foreign exchange earnings, surpluses from domestic production will have to be created even at the cost of raising domestic prices. In the foreign exchange situation that the country is facing, if the choice is between an enlargement of foreign exchange earnings and a rise in the prices to be paid by the domestic consumer, the former must have a decided preference.

24. Without adequate fiscal and monetary discipline, other regulatory measures cannot have the desired effect. But, fiscal and monetary policies by themselves may also not suffice to secure the right relationship between various prices or to prevent undue hardship to low and fixed income groups. It may be necessary, then, to have physical allocations and direct controls in certain sectors. It will be agreed, for instance, that so long as steel is scarce it should be distributed between competing uses on the basis of agreed priorities. It may, of course, be essential to raise the price of any commodity that is scarce, but it may not be desirable from an overall point of view to let the highest bidder get the bulk of the available supplies leaving the rest to their own devices. If, similarly, there is a shortage of an essential drug, control of prices and distribution at a fair price to genuine users would be the appropriate course of action to adopt. The same reasoning applies to essentials of life like food or cloth. The prices of what may be called basic essentials must be held reasonably stable: in regard to commodities that are "less essential" or could be classed as comforts or luxuries, a rise in prices may have to be tolerated. In the case of comforts and luxuries, in fact, an important factor in policy is the need to raise more resources; a rise

in their prices does not affect the common man. The techniques of price regulation may vary from commodity to commodity; in some cases an increase in production may be the only way to secure reasonable levels of prices. In other cases, buffer stocks, reorganisation of distribution arrangements and some direct controls may be inescapable.

#### COVERAGE OF CONTROLS

25. Government have powers to control prices and make allocations in respect of several commodities. Steel, cement, raw cotton, sugar and coal are in this category. Fertiliser prices are regulated through the Central Fertiliser Pool. Stabilisation of raw jute prices through regulated purchases by the manufacturing interests is also envisaged. Both under the Essential Commodities Act and under the Industrial Development and Regulation Act, the prices and distribution of a number of commodities are subject to control. Government can also adjust the rates of excise duty from time to time on all excisable articles so as to alter suitably the relationship between particular prices. At present, these adjustments can be made only when the budget is being presented. It would be desirable to examine whether in the interest of flexibility Government should take powers to alter excise duties suitably within defined limits in the course of the year.

26. The coverage of controls on items like these and the extent to which prices may have to be adjusted upwards or downwards will have to be determined in the light of the trends in production and demand as they arise from time to time. In the case of sugar, the problem at present is one of dealing with a surplus. It may be possible to export a part of this surplus. But since the domestic cost of production of sugar is higher than the world prices, sales abroad will have to be subsidised. Over a period, the internal demand for sugar will steadily rise, and the aim of policy should be to improve yields rather than to increase the area under cane cultivation at the cost of other crops. In regard to cotton, from the point of view of the consumer, lower prices of cloth would be desirable, but it has to be borne in mind that the shortage of raw cotton has to be made good by imports which cost foreign exchange. In a situation like this, a price incentive for increased production could justifiably be preferred. In the case of oilseeds, the need is to export more at the same time as domestic demand for oils is rising rapidly. The need here is to regulate prices in the interest primarily of exports. Prices for commercial crops will need to be regulated on a consideration of all these aspects.

27. The question of appropriate price parities links up with the issue whether the grower always gets the benefit of the prices that the consumer pays, or whether his gains are intercepted by middlemen.

Whatever the normal spreads between these prices, there is no doubt that the margin between producer's price and the consumer's price tends to go up in periods of shortage. The same holds for imported commodities for which demand is in excess of the available supplies. The State Trading Corporation has sought to reduce these margins by importing some commodities in bulk and selling them to actual users. To the extent possible middlemen's margins either in respect of imported commodities or in respect of domestically produced ones should be reduced by means of trading through governmental or cooperative agencies.

#### OPEN MARKET OPERATIONS IN FOODGRAINS

28. In an economy like ours where a substantial proportion of the expenditure incurred by families in the low income ranges is on foodgrains, reasonable stability of foodgrains prices is of vital importance. The experience in this field over the last decade and more has shown clearly that this is a field in which neither complete control nor complete decontrol are feasible. Government must always be in a position to regulate effectively the course of foodgrains prices. In regard to wheat, the supplies in hand and the imports expected over the next three years offer reasonable assurance of price stability except perhaps in the event of serious crop failure. The situation in regard to rice is more difficult as it will not be possible, in the event of shortage, to import adequate quantities of rice within the available foreign exchange resources. The position in regard to other cereals and pulses has always been highly variable.

29. The producer of foodgrains must get a reasonable return. The farmer, in other words, should be assured that the prices of foodgrains and the other commodities that he produces will not be allowed to fall below a reasonable minimum. The Third Five Year Plan postulates extended use of fertilisers and adoption of improved practices by the farmer. The farmer should have the necessary incentive to make these investments and to put in a larger effort. A policy designed to prevent sharp fluctuations in prices and to guarantee a certain minimum level is essential in the interest of increased production. It is important also that the appropriate measures or policies should be enunciated and announced well in time to ensure that the benefit accrues to the farmer. The other objective, no less essential, is to safeguard the interest of the consumer, and, as has been stated in earlier paragraphs, it is particularly necessary to ensure that the prices of essential commodities such as foodgrains do not rise excessively. These considerations indicate only the broad lines of policy. The key to stabilisation is the building up of buffer stocks and operating on them through continuous purchase and sales over a wide front. Since prices vary between different parts of the

here may be purchasing operations in some parts and selling in others. A major difficulty in the past has been inadequate facilities with Government. It is essential as part of long-range policy that the storage and warehousing facilities, under Government control, should be rapidly expanded. It should be known that at the Plan period Government would buy if prices of foodgrains tended to sag and would sell if they tended to rise. While immediately assisted and will assist for some time more in addition to the Government, it will be essential more and more to add to stocks by domestic purchases, as production increases. Similarly, wherever in the country prices of foodgrains tend to rise, it should be prepared to sell adequate quantities from its extensive open market operations need to be undertaken flexibly at a large number of places, so that their impact is felt directly at where it is needed.

Where and to what extent zoning arrangements will be necessary to be determined in the light of practical considerations. Whether the purchase and sale operations should be undertaken by the Central Government or through the State Government is a question on which decisions will need to be taken on grounds. What must be assured is that Government's ability to follow the course of prices is steadily increased and this requires operations over a wide front by way of purchase and sale of stocks with Government from this point of view might well be about five million tons. A network of cooperative and central agencies close to the farmer, licensing and regulation of trade, extension of State trading in suitable directions and a close sharing by Government and cooperatives in distribution at retail stage are essential for the success of purchase and sale operations for stabilising prices and correcting seasonal and regional imbalances. Regulation and control of prices are in this view an aspect of institutional changes—that is, a strengthening of public control as against private agencies—that must necessarily be part of developmental planning.

To conclude: the Plan provides for adequate increases in the output of essential commodities to permit reasonable increase in essential consumption. The primary task is to achieve these targets. Deficiencies in production can be overcome only with difficulty. Fiscal and monetary policies have continually to be orientated towards restraint in expenditure and maximisation of savings. The role of direct regulatory controls is essentially to correct imbalance in selected sectors. For this purpose, buffer stocks and market operations are vital. Policy actions have to be directed towards keeping price fluctuations of foodgrains and other basic essentials within defined maximum

and minimum limits. Price rigidity is incompatible with development and some prices cannot but rise. The object must be to regulate within defined limits the prices of basic essentials. Price regulation involves action at various points. The necessary incentives to larger production have to be preserved. It is, therefore, envisaged that Government would set up and promote the necessary cooperative and State agencies for purchase and sale of foodgrains at appropriate stages so as to strengthen its power to influence the course of prices and to prevent anti-social activities like hoarding and profiteering from getting the upper hand.

## CHAPTER VIII

### DEVELOPMENT OF FOREIGN TRADE

#### REVIEW OF IMPORTS

OVER the past decade, plans of economic development have exerted increasing influence on the country's foreign trade, in particular, on imports. With the growth of industrial production and the development of the economy as a whole, the level of imports has risen substantially over the last decade. Over the First Plan period the total imports amounted to Rs. 3620 crores or an average of Rs. 724 crores a year. In the Second Plan there was a sizeable step-up in the level of imports on account of the larger requirements of capital goods, raw materials, intermediate products, components, etc. During the first two years of the Plan imports rose sharply—from Rs. 746 crores in 1955-56 to Rs. 1099 crores in 1956-57 and to Rs. 1233 crores in 1957-58. Total imports declined in the two following years, a level of Rs. 920 crores being recorded for 1959-60. This decline in imports resulted from the tightening up of import licensing which the country had to follow in face of the foreign exchange difficulties. Imports in the last year of the Second Plan are estimated at around Rs. 1080 crores. For the Second Plan period as a whole, aggregate imports are estimated at Rs. 5360 crores—an annual average of Rs. 1072 crores, which is about 50 per cent higher than the average level for the First Plan. The following Table gives the annual average for imports of three main categories of goods during the First and the Second Plans:

Table 1: Imports 1951-61

category	(Rs. crores)	
	1951-56 annual average	1956-61 annual average
consumer goods . . . . .	235	247
raw materials and intermediate goods . . . . .	364	502
capital goods . . . . .	125	323
total . . . . .	724	1072

2. The Third Plan with its larger investment programme and continued priority for the development of basic and heavy capital goods



industries entails even larger import requirements than the Second Plan. Payments for imports of machinery and equipment for Plan projects are expected to amount to Rs. 1900 crores. It will be necessary, in addition, to provide for imports of components, balancing equipment, etc. of the order of at least Rs. 200 crores for increasing the domestic output of capital goods and equipment. Provision is being made for imports of raw materials, intermediate products, capital goods for replacement, essential consumer goods, etc., for the maintenance of the economy to the extent of Rs. 3650 crores, although the requirements of such imports for securing adequate utilisation of industrial capacity are considered to be distinctly larger. The total import bill for the Third Plan is thus estimated at Rs. 5750 crores in addition to P.L. 480 imports of the order of Rs. 600 crores. The average level of imports, inclusive of P.L. 480 imports, during the Third Plan period thus comes to Rs. 1270 crores, as compared with an average level of Rs. 1072 crores during the Second Plan.

3. The estimate of requirements of maintenance imports takes into account the savings in imports that are expected to arise as a result of larger outputs from projects which have already been commissioned or will be commissioned in the course of the Third Plan period. These savings also reflect the increases in the production of agricultural commodities during the Plan period. The principal savings anticipated are in respect of commodities such as raw cotton, mild steel, aluminium, various categories of machinery and transport equipment, drugs and chemicals, paper and paper-board, etc. The savings will, however, be offset in part by the larger requirements of imports of certain other categories of goods, notably, special steels, non-ferrous metals other than aluminium, petroleum products, fertilisers, etc.

In view of the difficult balance of payments position during the Third Plan period, the present system of foreign exchange budgeting and import licensing will be continued and improved upon further.

#### REVIEW OF EXPORTS

4. Over the past decade, on the whole India's exports have been stagnant. The First Plan annual average of Rs. 609 crores might have been smaller but for the exceptionally high exports in 1951-52 on account of the war in Korea, while the Second Plan average of Rs. 614 crores would have been higher but for the recession in 1958 in U.S.A. and Europe. In volume, exports were higher in the Second Plan by 9 per cent but, on account of less favourable unit values, this increase was

not reflected in larger export earnings. The trends during the period 1951-52 to 1960-61 may be seen from the Table below:

Table 2: Exports 1951-61

(base 1950-51=100)

year	value	volume index	unit value index	year	(value in Rs. crores)		
					value	volume index	unit value index
1951-52	733	80	148	1956-57	620	101	98
1952-53	577	89	104	1957-58*	591	96	98
1953-54	531	89	96	1958-59	559	94	97
1954-55	593	94	102	1959-60	644	105	98
1955-56	609	103	94	1960-61	645	n.a.	n.a.
total	3043	..	..	total	3069	..	..
average	609	91	109	average	614	99†	98†

5. Economic development within the country increased domestic demands and reduced the surpluses available for exports. Thus, over the decade, while the total world export trade doubled, India's share in it declined from 2.1 per cent in 1950 to 1.1 per cent in 1960.

6. In the pattern of export trade over the past decade, two main trends could be observed. Firstly, among commodities which are directly or largely based on agricultural production (which still account for the bulk of India's exports) such as tea, cotton textiles, jute manufactures, hides and skins, spices and tobacco, on the whole exports did not improve. However, significant increases were achieved in the exports of new manufactures and of products like iron ore, but these were not sufficient to offset the decline in the traditional exports. These trends may be seen from the following Table:

Table 3: Pattern of exports 1951-60

		(Rs. crores)			
		1950-51	1955-56	1958-59	1959-60
1	agricultural commodities and related manufactures	496.5	489.3	453.5	473.6
	cotton and jute manufactures (included in item 1)	250.5	181.7	153.4	180.5
2	other manufactures	58.4	61.0	53.3	105.0
	new manufactured products (included in item 2)	8.9	8.6	12.5	25.0
3	minerals	23.4	34.4	46.2	53.0
	total	578.3	584.7	553.0	631.6

\*Net of silver exports.

†Average for four years.

Note: Statistics in Tables 2, 3 and 4 in this Chapter are based on data published by the Director General of Commercial Intelligence and Statistics.

7. In recent years and, more especially since the middle of the Second Plan period, a series of measures have been initiated with the object of stepping up exports. It is possible that but for these efforts exports during recent years might have been lower. The measures in question were fairly widely conceived and included organisational changes, increased facilities and incentives and diversification of trade. To the first group belong Export Promotion Councils, which have been set up for cotton textiles, silk and rayon, engineering goods, chemicals, tobacco, spices, cashew, leather, plastics, sports goods and mica; establishment of the Export Risks Insurance Corporation; assignment to Commodity Boards for tea, coffee and coir of the duties of Export Promotion Councils; and increased facilities for publicity, fairs, exhibitions etc. In the second group may be mentioned measures such as removal of export controls and quota restrictions, abolition of most export duties, refund of excise duties, special import licences for raw materials for exports, and priorities for transport facilities. Thirdly, through the activities of the State Trading Corporation and development of trading relations with USSR and countries in Eastern Europe, there has been progress in the diversification of India's foreign trade.

#### DIRECTION OF TRADE

8. The following Table brings out changes in the direction of India's foreign trade during the First and Second Plan periods:

Table 4: Direction of India's foreign trade

country/area	exports			(per cent shares)		
	1952	1956	1960	1952	1956	1960
1 ECAFE countries	25.7	16.3	17.0	13.6	12.4	13.1
Japan	4.1	4.9	5.5	2.4	5.2	5.4
2 West Asia	5.7	5.8	6.5	7.7	10.8	7.5
3 Africa	3.6	3.9	2.5	3.8	4.0	4.4
4 Western Europe	29.6	39.8	38.5	30.1	50.1	40.4
U. K.	20.5	29.8	27.5	18.5	25.0	20.0
European Economic Community	7.5	8.3	8.0	8.8	20.0	18.
5 Eastern Europe and China	1.3	3.5	8.0	2.2	4.2	3.7
6 North America	21.1	17.0	18.7	37.3	12.4	25.2
U.S.A.	19.0	14.7	16.0	33.6	11.3	23.7
7 Latin America	1.4	1.0	2.5	..	0.1	0.1
8 Oceania	4.3	4.4	3.1	2.0	1.7	2.3
9 others	7.3	8.3	3.2	3.3	4.3	3.3
total	100.0	100.0	100.0	100.0	100.0	100.0

At present Western Europe accounts for nearly 39 per cent of India's export trade, U.K. taking 28 per cent of the exports. The share of U.K.

has remained more or less constant at this level for a number of years. The share of North America declined from 21 per cent in 1952 to 17 per cent in 1956, but increased in 1960 to 19 per cent of the total exports. Exports to ECAFE countries have been relatively static in recent years. The increased exports to Japan are accounted for largely by iron ore exports.

The European Economic Community's share has fluctuated between 6.3 and 9.5 per cent over the past ten years. The share of USSR and countries in Eastern Europe has increased from about 1 per cent during the first half of the First Plan to more than 8 per cent towards the end of the Second Plan.

9. Imports from Western Europe increased during the First Plan from 30 per cent to 50 per cent; the region accounted for nearly 40 per cent of India's imports at the end of the Second Plan. Imports from Eastern Europe increased from 2.2 per cent in 1952 to 4.6 per cent in 1956, but declined to 3.7 per cent in 1960. Imports from North America, which accounted for 37 per cent of the total in 1952 declined to 12.4 per cent in 1956, but increased again to 25.7 per cent in 1960, the variation being due mainly to food imports. Imports from ECAFE countries have fluctuated between 12 to 14 per cent during this period.

#### EXPORT OBJECTIVES IN THE THIRD PLAN

10. If the measures for expanding exports which have been taken so far are considered in relation to the underlying factors inhibiting exports, they cannot be said to have been adequate. One of the main drawbacks in the past has been that the programme for exports has not been regarded as an integral part of the country's development effort under the Five Year Plans. If a substantial increase in exports is to be achieved, action has to be taken along several directions, in particular, the following:

- (a) domestic consumption must be held within reasonable limits with a view to creating the surpluses for exports;
- (b) in view of the increasing profits which can be earned in the domestic market once an economy begins to develop, steps to increase the comparative profitability of exports are essential;
- (c) in their cost structure and productivity the principal industries, specially the export industries, must become competitive as early as possible, and a systematic programme to this end has to be pursued within each industry. This is an essential condition for diversifying exports and for

steadily increasing the share of new manufactures and minerals in the export trade. Industrial licensing policies should also be oriented towards export promotion; and

- (d) steps must be taken to mobilise public opinion in favour of exports and acceptance of the burdens involved, to enlist the cooperation of industry and trade in this national effort, to improve Government's own organisation for market research and intelligence and commercial representation abroad, and to enlarge facilities for credit, insurance, etc.

11. The foreign exchange requirements for the Third Plan have been analysed in the Chapter on Financial Resources. It is clear that if exports over the Third Plan period do not increase significantly beyond the figure of Rs. 3450 crores indicated in the Draft Outline, even if the external aid which has been assumed were forthcoming, there would be quite serious shortfalls in the Plan. Accordingly, on the basis of commodity and other studies which have been undertaken and assuming a large-scale effort to increase exports and reasonably favourable conditions of demand abroad, exports over the Third Plan period have been taken at Rs. 3700 crores. The effort and the planning will in fact have to be distinctly larger in magnitude. An important reason for stressing new and far-reaching measures and policies for increasing exports during the Third Plan is that this is the period in which exports must be built up in order to meet the much larger requirements anticipated for the Fourth Plan. Considering the requirements on account of repayment obligations abroad and maintenance and development imports, it is estimated that by the end of the Fourth Plan the annual level of exports would have to rise to about Rs. 1300 crores to Rs. 1400 crores, that is, to at least twice the present level. This is itself one of the essential conditions for ensuring that India's economy becomes self-reliant and self-sustained by the Fifth Plan.

12. It is against this background that the objective of achieving export earnings of not less than Rs. 3700–3800 crores over the Third Plan has been set. If exports rise to the extent envisaged, the annual level of exports over the Third Plan should rise by about Rs. 200 crores and the average annual exports for the Third Plan period should be about Rs. 150 crores above the average during the Second Plan period.

#### MEASURES FOR EXPANDING EXPORTS

13. Proposals for bringing about a marked increase in exports fall broadly under two groups, namely, general policies and measures relating to specific commodities. A number of these measures are intended to produce results over a short period of two or three years. At the same

time, other measures aiming at raising efficiency and lowering costs must be pushed forward to the farthest extent possible. The primary object of the general policies envisaged in support of the export programme is to create the necessary climate in the country for the export effort, to restrain domestic demands and enlarge surpluses available for exports, and to reduce production costs. It is realised that beyond a point action designed to increase exports will inevitably have certain repercussions on the domestic economy or on other sectors of development. Obviously, the choice is a difficult one but, having regard to the overall national interest, the highest possible priority has to be given to exports, and larger burdens within the domestic economy have to be accepted for the next 10 or 15 years as a price which must be paid for rapid economic development.

14. By far the most important condition for fulfilling the programme for exports is obviously the realisation of the agricultural and industrial targets of the Third Plan. If these were to fall short, measures which might otherwise be feasible, would become much less so.

15. Restraints on the growth of internal consumption are an essential condition of a successful export drive. They have to be resorted to where supplies are insufficient for meeting both home and foreign demands. They have also to be adopted where supplies could be increased through larger investments so as to save on internal resources as well as on foreign exchange. The rate of development of the economy would be more than proportionately enhanced through the additional exports which restraints on consumption could facilitate. As a rule, what is required is not absolute reduction in the total or the per capita consumption but only a slowing down in the rate at which consumption increases. In taking these and other measures it is of course essential that there should be greater public understanding of the need to step up exports and recognition that this object cannot be achieved without a degree of sacrifice which is equitably shared.

16. For achieving the export objectives, it is necessary not only to create the surpluses for exports, but also to ensure that the surpluses become available at prices competitive with those of other suppliers in markets abroad. Competitive export capacity depends largely on internal prices. From this point of view it is vital that inflationary pressures associated with development should be held in check.

17. For developing the export effort it is essential that a considerable part of India's industry should become much more competitive than it is at present. It is true that over a significant range of products Indian industry is capable of competing in export markets or, at any rate, of becoming reasonably competitive. However, the range of these industries

is not large enough at present. Study groups have been recently set up to consider ways of reducing costs in certain selected industries such as cement, jute, bicycles, electric motors and transformers and rayon. It is proposed to review the more important cost studies undertaken for different industries in recent years with the object of working out the lines along which programmes for cost reduction could be pursued systematically industry by industry. It is visualised that in industries which are significant for developing exports, licensing policies should take due account of the economies of scale. This factor should also be given weight in determining the location of individual units. In these industries the level of costs has over-riding importance and national interest requires that this consideration should receive precedence over certain other considerations which have normally to be kept in view in the scheme of planned development.

18. Rapidly growing internal demands have the effect of making sales in the domestic market relatively more profitable than in foreign markets. Within limits and over short periods, it may be necessary to consider fiscal measures designed to correct this trend. Naturally, details of these measures have to be considered from time to time in the light of the actual situation in different industries.

19. In view of the scarcity of foreign exchange, there has to be a clear priority in its allotment in favour of industries producing for exports or providing a substantial surplus for exports. Wherever feasible, it is hoped to work out each year in consultation with individual industries the quantities which they should endeavour to make available for exports. In some cases, to secure the surpluses indispensable for exports, it might be necessary to set physical limits to the total internal sales of individual manufacturing units, so that the rest of their production becomes available for exports. Enterprises in the public sector should also give a lead in the export effort by earmarking part of their output for export and taking suitable steps to effect sales abroad.

20. Export Promotion Councils should play a leading role in studying overseas markets and maintaining up to date intelligence. It is also hoped to strengthen the existing arrangements for enabling India's commercial representatives in foreign countries to provide adequate intelligence regarding overseas markets and to make these available to Indian industry and trade and, generally, to promote the country's foreign trade as intensively as possible.

21. Experience of State trading in recent years suggests that State trading organisations could play an important role in developing exports. Exports through cooperative organisations should be encouraged. It is also proposed to support the efforts of private export houses.

22. These are the broad lines along which it is proposed to develop the export effort for the Third Plan. Naturally, this will involve action over a wide field and decisions will have to be taken from time to time in respect of specific commodities. Some of these will involve the levy of excise duties; in others, it might be necessary to assure larger resources for development during the Third Plan. It would also be essential to try to increase invisible earnings, especially through tourism and shipping, and to facilitate foreign private investment.

23. Diversification of exports and the development of new export markets should be viewed as part of a wider effort to enlarge the country's foreign trade and expand commercial and economic relations with other countries. In the coming years special attention should be given to the development of close economic relations with other developing regions, notably South and South East Asia, West Asia, Africa, South America and West Indies. These countries will need capital goods and components and raw materials for their economic development and mutual possibilities of developing trade with them should be vigorously explored. Exports to the European Common Market countries also need special attention since a high proportion of India's trade deficit is with them. With United Kingdom, India has long enjoyed close trading ties which should be further strengthened in view of the growth of India's own productive capacity and changing economic structure. India's commercial transactions with USSR and countries in Eastern Europe are on a balancing basis and trade with these countries should increase significantly over the next few years. Trade with Yugoslavia has already expanded steadily and there is considerable scope for widening economic relations with it. North America and, in particular, U.S.A. provide about one-fourth of the country's imports. Their growing economies and high living standards offer large possibilities for the development of foreign trade and specially of exports. Thus, as the pace of India's economic progress increases and she is able both to offer and to receive more, she becomes part of an ever expanding world economy, in which growing cultural and economic relations enrich the life and strengthen the economies of all nations.



## CHAPTER IX

### BALANCED REGIONAL DEVELOPMENT

#### I

##### GENERAL APPROACH

BALANCED development of different parts of the country, extension of the benefits of economic progress to the less developed regions and widespread diffusion of industry are among the major aims of planned development. Successive Five Year Plans seek to realise these aims in larger measure. Expansion of the economy and more rapid growth increase progressively the capacity to achieve a better balance between national and regional development. In striving for such a balance, certain inherent difficulties have to be met, especially in the early phases of economic development. As resources are limited, frequently advantage lies in concentrating them at those points within the economy at which the returns are likely to be favourable. As development proceeds investments are undertaken over a wider area and resources can be applied at a large number of points, thereby resulting in greater spread of benefits. In the interest of development itself, the maximum increase in national income should be achieved and resources obtained for further investment. The process is a cumulative one, each stage determining the shape of the next. In some fields, as in industry, intensive and localised development may be inevitable. Along with this, in other areas, the aim should be to provide for more dispersed advance in sectors like agriculture, small industries, power, communications and social services. Equally with industry, investment in economic and social overheads helps to create numerous promising centres for growth. Once a minimum in terms of national income and growth in different sectors is reached, without affecting the progress of the economy as a whole, it becomes possible to provide in many directions for a larger scale of development in the less developed regions. A large country with extensive natural resources, viewing each phase of its development in the perspective of a long-term plan, has the means not only to realise a high and sustained rate of growth but also to enable its less developed regions to come up to the level of the rest.

2. The two aims—increase in national income and more balanced development of different parts of the country—are thus related to one another and, step by step, it becomes possible to create conditions in which resources in terms of natural endowment, skill and capital in each region

are fully utilised. Sometimes the sense of lagging behind in development may be due not so much to a slower rate of overall growth in the region as to inadequate or tardy development in specific fields, such as, agriculture; irrigation, power or industry or employment. In each region the nature of the problem and the impediments to rapid development in particular fields should be carefully studied, and appropriate measures devised for accelerated development. The essential object should be to secure the fullest possible utilisation of the resources of each region, so that it can contribute its best to the national pool and take its due share from the benefits accruing from national development.

3. The growth potential of each region should be fully developed, but the precise manner in which this goal is achieved and the stages of growth will not be identical. Some regional factors, such as those connected with physical features and geographical location, cannot be easily altered, but there are others which can be influenced by raising levels of education and skill, developing power and, generally, by applying science and technology on a larger scale. Large scale industries, specially basic and heavy industries, frequently serve as a spearhead of intensive and broad-based development. However, not all regions can offer equally favourable conditions for the development of industry. It is also possible to over-estimate the significance of the location of large industrial units in relation to the living standards of the bulk of the population. There are many examples, both of countries and of regions within a country, in which, with limited development in industry, an appreciable rise in living standards has been achieved through the fuller utilisation of local natural and human resources. There are also instances of areas around massive projects where no great impact on the levels of living of the people is to be observed. Apart from the basic and capital goods industries and other large industries, there are other industries whose possibilities need to be fully explored, such as labour intensive industries of the traditional type, small scale industries of the modern type, agricultural processing industries, forest industries, assembly operations and recreational industries. Each region should endeavour to identify, plan for and promote industries which are specially suited to its conditions and for which it can provide relatively greater facilities.

## II

### POLICIES FOR REGIONAL GROWTH

4. The general approach set out above was expressed through a variety of policies and programmes which were embodied in the Second Five Year Plan. Among the most important of these were:

- (1) the priority given to programmes like agriculture, community development, irrigation, specially minor irrigation, local

development works, etc. which spread over the entire area within the shortest possible time:

- (2) provision of facilities such as power, water supply, transport and communications, training institutions, etc. in areas which were lagging behind industrially or where there was greater need for providing opportunities for employment;
- (3) programmes for the expansion of village and small industries; and
- (4) in the location of new enterprises, whether public or private, consideration given to the need for developing a balanced economy in different parts of the country. In particular, this aspect was to be kept in view where the location of an industry was not determined almost entirely by the availability of raw materials or other natural resources.

In addition to these measures, the Second Plan envisaged an effort to promote greater mobility of labour between different parts of the country and to organise schemes of migration and settlement from more to less densely populated areas. The Plan also suggested that there should be continuous study of the problem of regional disparities and suitable indicators of regional development should be evolved.

5. In drawing up and implementing the Second Plan, the regional aspects of development were dealt with in three different ways. Firstly, through the plans of States emphasis was given to programmes which had a direct bearing on the welfare of the people in different parts of the country. Secondly, special programmes were undertaken in particular areas where development had either received a temporary setback, or was being held back by certain basic deficiencies. In the third place, steps were taken to secure more dispersed development of industry which, in turn, creates conditions for development in several related fields.

6. Programmes of agriculture, community development, village and small industries, irrigation and power, communications and social services have the widest coverage, and aim at providing basic facilities and services to people in all regions. Since these programmes are included in the plans of States, it is largely through the shape given to State plans and the changes through which they pass in the course of the Plan period that the benefits of development are carried to every part of the country. River valley projects formed a most important segment in the plans of several States and large investments have been made in multi-purpose projects like the Hirakud, Kosi, Chambal, Rihand, D.V.C., Bhakra-

Nangal, Koyna and Nagarjunasagar. These and other projects were essential for the development of vast regions in the country, some of which suffered from scarcity or unemployment or were otherwise poorly developed. Implementation of agricultural production and community development programmes, and of education and health schemes also carried the benefits of development to the remotest areas.

7. In addition to these general or overall programmes of development, both in the First and the Second Plan, special schemes were formulated for particular areas which had difficult problems to face. Thus, in 1953-54 a programme of permanent improvements in scarcity areas was taken in hand in several States at a total cost of about Rs. 40 crores. The programme included medium as well as minor irrigation schemes, construction of embankments for flood protection and land reclamation and contour bunding schemes. Again, in 1957, when scarcity conditions developed in some States, the problem was studied and additional development programmes were taken up. For less developed areas situated in different States, such as, Vidharba and Marathwada, the eastern districts and other backward areas in Uttar Pradesh and hill areas in Punjab and Uttar Pradesh, the States concerned have frequently provided for special outlays within their plans, and have made special arrangements for the representatives of such areas to participate in making their own plans. In States like Madhya Pradesh, Orissa and Assam, additional programmes have been undertaken in areas inhabited by backward classes. These include roads and communications, multi-purpose development blocks, forest cooperative societies, and measures to improve upon the existing systems of shifting cultivation. A study of the problems of inaccessible areas in different States has also been undertaken by the Ministry of Food and Agriculture.

8. As regards the diffusion of industrial activity, so far as the larger industries are concerned, economic and technical considerations are always important and in practice only marginal deviations are feasible. The disadvantages which particular areas may have for the location of the larger projects are not always basic or irremediable, for, at times they may reflect only the lack of basic facilities and services. In the location of public sector projects, the claims of relatively backward areas have been kept in view wherever this could be done without giving up essential technical and economic criteria. The location of several important projects like the steel plants has been determined on the basis of expert study and on economic considerations. But as they are situated in areas which were hitherto industrially backward, the latter will benefit. Similarly, schemes for the development of certain natural resources such as lignite deposits in Arcot, iron ore in Orissa, bauxite deposits in Salem and lead

and zinc deposits in Rajasthan will benefit areas which have been relatively less developed.

9. While, in the selection of sites for basic capital and producer goods industries, proximity to raw materials and other economic considerations have naturally been important, it was felt that in a wide range of consumer goods and processing industries it was possible to foster regional patterns of development. These include cotton textiles, sugar, light engineering industries such as bicycles, sewing machines, electric motors, radio receivers, re-rolling of steel and non-ferrous metals from billets and semis, moulded plastics and manufacture and further processing of bulk drugs from penultimate products. Typical examples are the establishment of textile units in Rajasthan, Orissa, Assam and Punjab; sugar factories and distilleries in Andhra Pradesh, Madras, Mysore and Maharashtra; steel re-rolling mills in Assam, Madhya Pradesh, Kerala and North Bihar and tyre and tubes factory and electric lamps factory in Kerala. In the case of light engineering industries, the decision to sell steel at a uniform price at all rail-heads is an important step taken during the Second Plan for securing their wider dispersal. The policy followed regarding the licensing of new units in the sugar industry has assisted development in the peninsula. Similarly, new cotton textile mills have been encouraged to come up in areas in which the industry had not so far developed.

10. To some extent the development of new processes and new uses of raw materials has assisted in the spread of industry. Thus, a beginning was made with the use of bagasse as a raw material for paper, and a number of paper factories based on the use of bagasse have been approved for being set up in sugarcane growing areas. In Uttar Pradesh a synthetic rubber plant is being established on the basis of alcohol, which was formerly being used mainly for admixture with petrol. A decision has been taken to license pig iron plants, each up to a capacity of about 100,000 tons, in areas where non-metallurgical coals locally available could be used, if necessary, along with coke produced from metallurgical coal. Besides increasing the production of pig iron this will ensure dispersal of the industry. In encouraging such developments care has of course to be taken to ensure that a balance is maintained between regional distribution and considerations of economy in production.

11. Village and small industries are spread all over the country and various forms of assistance provided by the Central and State Governments are made available in the areas according to the programmes which are undertaken. Industrial estates have been set up in all States, and increasingly they are to be located in the smaller towns and rural areas.

## III

## REGIONAL POSSIBILITIES IN THE THIRD PLAN

12. With development on a scale larger and more comprehensive than in the recent past, the Third Plan provides extensive opportunity for the development of different parts of the country. Some of the most important programmes in the Plan fall necessarily within the plans of States. In drawing up these plans, the broad objectives have been to enable each State to contribute its best towards increasing agricultural production, to secure the largest measure of increase in income and employment feasible, to develop social services, in particular, elementary education, water supply and sanitation, and health services in the rural areas, and to raise the levels of living for the less developed areas. Thus, State plans are intended to be oriented towards greater production and employment and the welfare of weaker sections of the population. Every effort has been made to propose outlays for different States after considering their needs and problems, past progress and lags in development, specially in social services, communications and power, likely contribution to the achievement of major national targets, and potential for growth, as well as the contribution in resources which they could themselves make towards the financing of their plans. In assessing the needs and problems of different States, such factors as population, area, pressure on cultivated land, commitments carried over from the Second Plan and those arising from large projects, and the state of technical and administrative services available have been taken into account. Thus, as far as possible, an attempt has been made to consider both national and State priorities. Taken as a whole, the size and pattern of outlays in the States under the Third Plan are calculated to reduce disparities of development between different States, although, in the nature of things, this is a process which must take time.

13. In addition to the role assigned to the plans of States, there are several important features in the Third Plan which will enlarge the possibilities of development in areas which have in the past been relatively backward. Thus, for instance, the intensive development of agriculture, extension of irrigation, village and small industries, large-scale expansion of power, development of roads and road transport, provision for universal education for the age-group 6-11 years and larger opportunities for secondary, technical and vocational education, improvements in conditions of living and water supply, and programmes for the welfare of scheduled tribes and castes and other backward classes will go a long way to provide throughout the country the foundations for rapid economic development. Poverty and under-employment are specially acute in areas with heavy pressure of population and in those with scanty development of natural resources. The large programme of rural works, which it is

proposed to undertake during the Third Plan, will help expand opportunities for work in these as well as other areas. In some parts of the country, there will be considerable development in plantation industries, specially tea, coffee and rubber. Large industrial projects, river valley projects and others described later will also serve as vital centres for future growth.

14. *Industrial location and development areas.*—As explained earlier, for basic industries location has generally to be based on technical and economic considerations. Moreover, in the case of industries which may be able to export a significant proportion of their output, in the national interest the location of new or additional capacity has to be guided by the need to secure economies of scale and to enhance the ability to compete in foreign markets. But, subject to these broad considerations, the needs of areas which have the necessary potential for industrial development should be kept in view in the selection of sites for industrial projects both in the public and the private sector. The general approach has to be to avoid further concentration of industrial activity in areas where considerable development has already taken place or has been planned, but expansion in existing industries in such areas cannot, of course, be ruled out if it leads to greater economies in production. Similarly, as far as possible, care must be taken to set up new industries away from large and congested cities.

15. From decisions regarding location of projects in the public sector which have been reached so far, it is apparent that there will be a fair measure of dispersal and various regions will have a significant share in industrial development. As examples the following may be cited: expansion of the Rourkela steel plant and fertiliser factory in Orissa; Nunmati oil refinery, fertiliser plant and use and distribution of natural gas in Assam; phyto-chemical plant, expansion in fertiliser capacity and construction of a shipyard in Kerala; the synthetic drugs factory, Visakhapatnam dry dock and expansion of Hindustan Shipyard, Praga Tools and the Andhra Paper Mills in Andhra Pradesh; the security paper mill, basic refractories project and expansion of Nepa mills, the Bhilai steel plant and the Heavy Electrical Project in Madhya Pradesh; the antibiotics factory, fertiliser factory, refractories plant and expansion of precision instruments factories in Uttar Pradesh; development of copper deposits in Rajasthan; a machine tool factory in Punjab; surgical instruments plant, raw film project, pilot iron and steel plant, Neiveli lignite high temperature carbonisation plant, teleprinter factory and a steel rolling mill in Madras; oil refinery in Gujarat; and a cement factory in Jammu and Kashmir.

16. In the licensing of industrial projects in the private sector also, the claims of under-developed regions are kept in view and locations in

such areas are suggested to prospective industrialists. The progress, programmes and production targets of a number of industries in the private sector are examined from time to time with a view to securing the location of new capacity on a zonal basis. It is recognised that in future there should be even greater stress in these directions. For example, it is proposed that the new textile mills to be established in the Third Plan period should, by and large, be distributed in regions where at present there is little capacity. Similar studies have been conducted in respect of some of the light engineering industries. Among illustrations of important projects in the private sector which are expected to be set up during the Third Plan in the less developed regions may be mentioned an aluminium plant and cellulose acetate factory in Uttar Pradesh; a fertiliser factory, a nylon factory, caustic soda-P.V.C. factory and a zinc smelter in Rajasthan; synthetic rubber, polythylene and carbon black projects and paper pulp factory in Assam; and an automobile rubber tyre factory and expansion of several existing plants in Kerala.

17. The Industrial Policy Resolution visualised that facilities such as power, water supply and transport should be made available in areas which are at present lagging behind industrially or where there is greater need for providing opportunities for employment, so that suitable industries could be established there. To give effect to this suggestion, the Third Plan includes a proposal for setting up 'industrial development areas' in backward regions. In such regions in selected areas basic facilities like power, water and communications are to be provided, and factory sites developed and offered for sale or on long lease to prospective entrepreneurs. The scheme has been drawn up primarily to promote medium-sized industries, but it is anticipated that, along with these, there will be wider scope for establishing small-scale industries, specially those of an ancillary character. It should also be possible to establish industrial estates within or in proximity to the proposed industrial development areas. The scheme has been broadly accepted by States and specific proposals are being worked out.

18. *Large projects as nuclei of regional growth.*—The benefits of a large project accrue in greater measure to the population of the region in which it is located if certain related or complementary programmes and schemes are undertaken. Therefore, as an essential feature of planning, every major project should be regarded as a nucleus for integrated development of the region as a whole. Around the new irrigation projects for instance, a whole group of schemes aiming at the development of improved agriculture, horticulture, market centres and processing and other industries should be taken up. Similarly, steel plants and other large industrial projects provide the basis for the development of small and medium industries and programmes of education and training and other activities. Such possibilities of development exist in all large



regions in which new resources will be developed during the Third Plan, such as, Dandakaranya, the Rajasthan canal area, and the regions served by the Tungabhadra, Nagarjunasagar, Koyna, Chambal and several other projects. Problems of a somewhat different kind are posed by the growth of metropolitan cities and of large and growing cities. In metropolitan regions like Calcutta, Delhi, Bombay or others, it is necessary to pursue a series of programmes aiming at balanced regional development, including appropriate land and housing policies, establishment of new towns and decisions regarding the location of industries. Thus, in different types of regions the preparation of regional or area development plans should be undertaken at an early stage in the Third Plan. In this way, the benefits flowing from the location of new and vital centres of activity or the creation of new sources of wealth can be greatly increased and far more widely distributed.

19. *Role of technological developments.*—Development potentials of different regions need to be studied in relation to the possibilities which arise from advances in technology and science. For example, the handicaps of certain regions such as Assam, Gujarat and Rajasthan arising from lack of deposits of coal may be materially reduced as hydel power, oil and atomic energy become available. From a long-term point of view, this factor is of great importance in regional development. Similarly, improvements in transport and communications are already bringing distant regions nearer, as for instance in the case of Assam, Jammu and Kashmir and parts of Orissa, Madhya Pradesh and Rajasthan, and making it possible for them to share more fully in the general economic advance. Increase in the supply of electric power and the extension of rural electrification are important factors in opening up new possibilities of regional development. Several of the less developed areas in the country will register considerable progress in these directions during the Third Plan.

20. *Education and training.*—In areas which are less developed, lags in education are among the greatest handicaps in achieving rapid economic progress. Expansion of the general educational base through the programmes of free and compulsory primary education and provision of facilities for technical training is likely to make a steadily increasing contribution to the development of the less advanced regions. Financial provisions for these programmes have been made in the plans of States, but it is necessary to ensure that the resources earmarked for the development of primary education in the less developed areas and for the education of girls are effectively utilised. Facilities for the training of engineers, doctors, agricultural specialists, craftsmen and others are already being distributed throughout the country. The requirements of the population of relatively less developed areas in which new industrial projects may be located should be particularly borne in mind when programmes for technical, vocational and secondary education are implemented.

21. *Labour mobility*.—In some parts of the country, there has been for long considerable mobility of labour. For instance, labour from Bihar works in the tea plantations in Assam and labour from Rajasthan works on roads and irrigation projects in Punjab and elsewhere. The redeployment machinery set up at the Centre and in the States for different areas assists movement of skilled personnel to new projects. The question of migration and mobility of labour is of course a wider one. The scope for transferring large numbers of unskilled workers from the more densely to the less densely populated parts of the country may at present be relatively limited. However, it is apparent that skilled and semi-skilled workers can move from one area to another with much less difficulty and are absorbed more readily wherever the local economy is developing rapidly. It is, therefore, necessary that in areas of high density, besides assuring their own intensive development to as great an extent as possible, technical training programmes should be expanded considerably, so that a body of trained workers also become available for work elsewhere.

22. *Personnel for development*.—The level of development depends to a considerable extent on the availability of competent administrative and technical personnel and on the growth of a class of small and medium-sized entrepreneurs who are prepared to venture into new fields and take risks and more generally, on the development of local initiative and leadership. Attention should be given to these aspects of development, for they point to handicaps which cannot be removed merely by providing resources to an under-developed region.

#### IV

##### STUDIES IN REGIONAL DEVELOPMENT

23. Continuous study of economic trends and rates of growth in different areas and of the programmes bearing on the less developed regions is useful in formulating programmes for more balanced regional development. Under-developed areas which need special attention have to be more closely identified, their resources surveyed and the factors influencing their development examined. The concept of a 'region' also needs to be defined more clearly. There are regions within States as well as those which extend beyond them and, depending upon the purpose in view, different concepts may be employed. Within every State, there are areas which are more under developed than others. As explained earlier, problems of regional development also arise in a variety of other contexts, as for instance, in areas around major projects, areas where new resources are being developed, and metropolitan regions. For assessing levels of development in different regions, indicators of development based on agricultural production, industrial production, investment, unemployment, electricity consumption, irrigated area, value of output by commodity producing sectors, level of consumption expenditure, road mileage, primary



the problems of rural areas at various stages of development. The city surveys and other studies organised under the auspices of the Research Programmes Committee offer valuable data bearing on urban and regional development problems. Surveys of metropolitan regions like Delhi and Bombay and those proposed for Calcutta have also considerable importance for planning. Thus, as a result of several steps which have been taken in recent years, a wide range of technical, economic and social data regarding the problems and possibilities of regional development have become available, and will assist planning for the future.

26. Development of regions and of the national economy as a whole have to be viewed as parts of a single process. The progress of the national economy will be reflected in the rate of growth realised by different regions and, in turn, greater development of resources in the regions must contribute towards accelerating the rate of progress for the country as a whole. Excessive emphasis on the problems of particular regions and attempts to plan for their development without relating their needs to the requirements of the national economy have to be guarded against, for, in the final analysis, it is as integral parts of the country that different regions can best hope to realise their full potential for growth. Balanced regional growth emerges eventually from a whole series of connected developments, many of which are of a long-term character. Over the short period, advance towards the goal will frequently seem small and incomplete. This is true for individual regions and, equally, for the national economy as a whole. Whatever the present shortcomings, the aim must be that over a reasonable period all regions in the country should realise their potential for economic development and should attain levels of living not far removed from those of the nation as a whole. Progress in different regions must, therefore, be watched carefully, and additional steps taken to speed up development in particular areas which are found to be seriously lagging behind. In the perspective of long-term development, with the economy advancing rapidly towards the stage of self-sustained growth and with steady rise in the living standards of the people, regional and national development are essentially two different facets of a common objective.

## CHAPTER X

### EMPLOYMENT AND MANPOWER

#### I

#### ANALYSIS OF THE PROBLEM

EMPLOYMENT has been a major objective of planning in India; it was so in the first two Plans and has assumed a special urgency in the Third. Full utilisation of the available manpower resources can be achieved after a considerable period of development. However, expansion of employment opportunities commensurate with the increase in the labour force over the Plan period is conceived as one of the principal aims of the Third Plan. In view of the numbers involved, provision of adequate employment opportunities is among the most difficult tasks to be accomplished during the next five years.

2. In the rural areas, both unemployment and under-employment exist side by side; the distinction between them is by no means sharp. In the villages, unemployment ordinarily takes the form of under-employment. In many parts of the country, during the busy agricultural seasons, shortages of labour are frequently reported, but over the greater part of the year, a large proportion of agricultural labour and others engaged in allied activities are without continuous employment. The consequent drift of workers from villages to towns only serves to shift the focus of attention from rural areas to the urban. Though recent surveys show a somewhat higher rate of unemployment in the towns, this itself is a reflection of the lack of adequate work opportunities in rural areas. Urban and rural unemployment in fact constitute an indivisible problem.

In the urban areas, employment is linked with fluctuations in the state of business, transport and industry. Any change in conditions is reflected in an increase or decrease in employment figures. While this is generally true, towns—large and small—share with villages a measure of distress caused by under-employment.

3. The existing data are inadequate for building up a sufficiently detailed picture of the state of employment for the country as a whole and in its regional, urban and rural aspects. But statistics apart, there is a general belief, which is strengthened by the limited number of employment opportunities reported to the employment exchanges and the

pressure of employment seekers on them, that in terms of unemployment the economy suffered significant deterioration in the last five years. The high rate of growth of population, as reflected by the limited 1961 Census data, now available, would indicate that the problem is one of increasing complexity. This has been broadly confirmed by the findings of the Second Agricultural Labour Enquiry, the National Sample Survey and the studies undertaken by the Programme Evaluation Organisation. This, however, is not a complete statement. Development programmes have provided additional employment opportunities to a significant extent; but these are not being created fast enough to absorb the numbers who enter the labour force each year. If any further deterioration in the employment situation is to be avoided, the goal of planning must be to absorb in gainful employment in each five-year period at least the equivalent of new entrants to the labour force.

4. It is not easy to measure unemployment in an under-developed country. There is a tendency, specially among the self-employed, to share work between members of the family or the group. Where the available work opportunities are spread too thinly even to provide tolerable means of livelihood, a part of the population migrates in search of paid employment. It is in relation to this section of the population that the term "unemployed" can be used with some exactness. For the rest, one can only speak of under-employment for varying periods. An important factor in planning for larger employment within the present occupational structure is that, for lack of employment opportunities, a considerable proportion of self-employed persons have to function below capacity and do much less work than in fact they are willing to. Statistics about under-employment depend very much on how the term is defined. At the present stage of development, it is difficult to determine the volume of under-employment with reference to 'norms' of hours per day to be worked by individuals or other similar criteria. It is more meaningful to judge the amount of under-employment by the extent of additional work an individual may be willing to take up. This is the concept which has been adopted in the more recent rounds of the National Sample Survey.

5. The limited data at present available may be considered in relation to the following aspects of the employment problem; (a) numbers unemployed at the end of the Second Plan, (b) addition to the labour force during the Third Plan, and (c) assessment of additional employment likely to be secured through the implementation of the Plan as formulated. It is also necessary to take into account such measures as would help to step up the employment effect of development schemes with a significant labour component, such as construction and small industries. Even if the full employment potential of the Plan is achieved, it will be necessary to think of special employment programmes to cover the residual employment gap.

6. In the course of the Second Plan the additional employment opportunities created amounted to about 8 million, of which about 6·5 million were outside agriculture. The backlog of unemployment at the end of the Second Plan is reckoned at 9 million. This estimate is admittedly rough. It takes account of the estimate of unemployment as at the beginning of the Second Plan (5·3 million), the larger increase in labour force during the Second Plan period than had been visualised earlier (1·7 million), and the estimated shortfall in the employment target originally proposed for the Second Plan (about 2 million). In addition, under-employment in the sense of those who have some work but are willing to take up additional work cannot be precisely estimated, but is believed to be of the order of 15–18 million.

7. Increase in the labour force during a given period is calculated with reference to the proportion of men and women in the age group 15–59 years who are estimated as being gainfully employed or seeking employment. In the Draft Outline of the Third Plan, the increase in labour force had been worked out at 15 million, and it was pointed out that, if deterioration in the employment situation was to be avoided, additional employment opportunities of this order would have to be found during the Third Plan. Information for the 1961 Census regarding the age composition of the population and changes in the extent of participation in the labour force by men and women is not yet available and, at this stage, certain general assumptions on these aspects have to be made on the basis of the latest reports of the National Sample Survey. On such estimates as are at present possible, it appears that during the Third Plan the addition to the labour force may be of the order of 17 million, about a third of the increase being in the urban areas. When fuller data become available, it will be necessary to work out the increase in the labour force in relation to different States, so that each State may endeavour to realise the employment potential of programmes and projects under the Plan and consider the extent to which these could be supplemented by other measures. In a growing economy, mobility of labour, specially among skilled workers, is of great importance and should be encouraged and facilitated. However, in relation to the numbers involved, the effects of such mobility as can be achieved in the next few years will be necessarily limited and will not affect the total size of the task to be undertaken in each State or region.

8. The employment objectives of the Third Plan need to be viewed in the perspective of a longer period. Increase in the labour force over the next 15 years may be of the order of 70 million. This consists roughly of about 17 million in the Third Plan, about 23 million in the Fourth and about 30 million in the Fifth Plan. The experience of the first two Plans has shown that a larger proportion of the employment opportunities

generated during the period have gone to the non-agricultural sector. On the assumption that this trend will continue in future and also that about two-thirds of the increase in the labour force over the next 15 years is absorbed outside agriculture, it should be possible to reduce the proportion of the working force dependent on agriculture to around 60 per cent by 1976.

## II

### ADDITIONAL EMPLOYMENT IN THE THIRD PLAN

9. There are inherent difficulties in estimating the employment potential of the vast range of projects and programmes which form part of a plan of development stretching over a period of five years. In each sector of the Plan two major assumptions have to be made. The first is that through appropriate economic and other policies, production and employment will not be allowed to fall below the existing levels. Secondly, the various development programmes for which the Plan provides will be undertaken with the necessary efficiency and economy and continuity of output would be assured. In some fields, as in agriculture and trade, it is specially difficult to estimate the likely additional employment. Increase in agricultural production, to which the Plan devotes a fair share of resources, will lead primarily to reduction in under-employment, although there will also be a measure of net increase in employment opportunities. In less developed countries, the numbers engaged in trade are large, in relation to the work they are required to handle, so that the effect of expansion in the trading sector is more to reduce under-employment than to provide additional work opportunities to new entrants.

10. In industry, increase in investment and capacity does not lead to a proportionate growth of employment because new processes, specially in large-scale manufacture, have generally to be based on high productivity techniques. The choice of techniques becomes, thus, a matter of crucial importance for employment policy. In certain branches of industry, it is essential to adopt the scale and methods of production which will yield the largest economies. This has to be balanced by a deliberate effort in other fields to employ techniques which will be more labour-intensive and will save on capital resources, specially foreign exchange. Labour intensive methods have even wider application in the field of construction in which, given the necessary organisation and advance planning, it is possible to use manpower to a greater extent than has been common in recent years. What techniques should be adopted have to be determined not only according to the types of activities to be carried out, but also by the economic and social characteristics of the regions in which they are undertaken. In areas in which there is considerable pressure of population, special care must be taken to follow methods which, consistent with the overall objectives, make the maximum use of the available manpower resources.



11. In estimating the employment effects of the Plan, it is usual to distinguish two phases of employment—the construction phase and the continuing phase. Employment on construction, though temporary, postulates a certain order of investment even for maintaining it at a given level. Increase in construction employment can, therefore, be estimated with reference to the increase in investment over the previous Plan period. Since investment in construction is divided broadly between the labour component on the one hand, and machines, materials and services on the other, for working out the additional employment, the former has to be calculated with some precision.
12. In estimating continuing employment in fields such as agriculture, irrigation, industry, transport, social services, trade, etc., a variety of criteria have to be followed. For instance, development of agriculture, afforestation and irrigation facilities may in part reduce under-employment and in part provide full-time employment to new entrants. It is by no means easy to ascertain the relative share of the benefits to the under-employed and to new entrants. Programmes of development like soil conservation, afforestation, land reclamation, flood control, settlement on land and the utilisation of irrigation facilities will provide means for employing new entrants to the labour force in addition to giving greater employment to those who are already at work. For this purpose certain norms have been adopted on the basis of experience accumulated over the last ten years.
13. In estimating additional employment in industries, depending upon their character, employment may have to be related either to the investment or to increase in levels of production after allowing for rise in productivity in some cases; in others, reliance has to be placed on project reports and on information supplied to the Licensing Committee. In road transport, the criterion may be furnished by different indicators of increase in the volume of passenger and goods traffic. In the field of social services a variety of tests have to be adopted, depending upon the level at which the Plan intends to provide these services to the community. For instance, in health services, the requirements of different types of personnel were assessed in relation to the population served. In education, the pupil-teacher ratio was used as the criterion.
14. Apart from the direct employment flowing from different development programmes, account has also to be taken of indirect employment in such fields as trade, commerce and transport. In the Second Plan, indirect employment was reckoned at 52 per cent of the additional employment which could be attributed to development programmes under the Plan, both in the public and the private sectors. On the basis of recent studies it would be reasonable to assume for the Third Plan, indirect employment benefits at 56 per cent of the additional em-

ployment attributable to development programmes in the Plan. Finally, certain checks have to be applied to estimates of additional employment worked out for different sectors. Gradually, fuller data for such overall appraisal are becoming available. These include the results of special surveys and investigations, project studies, employment market information gathered by the National Employment Service, and analysis of information provided in applications submitted for industrial licenses. Estimation of employment in relation to a plan of development involves a number of assumptions, which have to be continuously tested. In the nature of things, therefore, there can be no finality in estimates of employment which might be worked out in relation to a plan of development. Experience of the last ten years shows that there is need for continuous examination and improvement of methods and for assessment of the actual performance in relation to initial estimates of employment and investment. To facilitate this, a detailed statement of the assumptions made in calculating the additional employment potential of the Third Plan is given in Appendix C.

15. Following the methods of estimation explained above, it is reckoned that the Third Plan may provide additional non-agricultural employment of the order of 10.5 million and additional employment in agriculture of about 3.5 million. The additional non-agricultural employment is distributed broadly as follows:

#### Additional non-agricultural employment

sector	(in lakhs) additional employment in the Third Plan
1 construction*	23.00
2 irrigation and power	1.00
3 railways	1.40
4 other transport and communications	8.80
5 industries and minerals	7.50
6 small industries.	9.00
7 forestry, fisheries and allied services	7.20
8 education	5.90
9 health	1.40
10 other social services	0.80
11 government service	1.50
total (1 to 11)	67.50
12 'others' including trade and commerce at 56 per cent of total(1 to 11)	37.80
grand total	105.30

\*Since construction accounts for a large portion of the measureable employment, its break-up under different developmental sectors may be useful:

agriculture and community development	6.10
irrigation and power	4.90
industries and minerals, including cottage and small industries.	4.60
transport and communications, including railways	3.40
social services	3.50
miscellaneous	0.50
total	23.00

16. Besides additional employment outside agriculture and in agriculture described above, there will also be significant relief to under-employment, but it is difficult to indicate its extent in quantitative terms. In agriculture, only about a fourth of new employment potentialities have been taken account of for estimating additional employment and the remaining are expected to provide relief to under-employed persons. In village and small-scale industries, only full-time jobs have been accounted for in the table above. While the economy seeks to absorb as many workers as possible into non-agricultural occupations, during the Third Plan it is expected that there will be a net addition to the total number of workers engaged in agriculture. A large part of the increase in the labour force will take place in families who are at present dependent on agriculture. If employment opportunities do not develop sufficiently in the non-agricultural sectors, under-employment in agriculture will be further intensified, leading to lowering of living standards in a section of the community upon whom the growth in population has already borne harshly. It should also be stated that in the nature of things, estimates of additional employment arising from the Plan are subject to a considerable degree of uncertainty. If some of the assumptions made are not borne out by later experience, or if the various programmes and projects are not implemented in a sufficiently effective and continuous manner, the additional employment estimated above may not be fully realised.

17. If, in consequence of Plan programmes, employment opportunities are available for about 14 million persons, leaving aside the backlog of unemployment, even for providing work for the new entrants to the labour force, there is need to find additional employment opportunities for 3 million persons. This is considered to be an essential objective in the Third Plan.

At this stage it must be emphasised that although the validity of quantitative estimates is affected by the inadequacy and complexity of employment data, experience in the First and Second Plans show that employment targets could not be achieved in full because of shortfalls in performance in various sectors of the Plan. Every attempt has, therefore, to be made to avoid the recurrence of such a situation.

It is proposed that the problem should be approached along three main directions. Firstly, within the framework of the Plan, efforts should be made to ensure that the employment effects are spread out more widely and evenly than in the past. Secondly, a fairly large programme of rural industrialisation should be undertaken with special emphasis on programmes of rural electrification, development of rural industrial estates, promotion of village industries, and effective re-deploy-

ment of manpower. Even though, in the first instance, the introduction of new production techniques may result in a decrease in employment, it is expected that there will be significant long-term benefits in revitalising the rural economy. Thirdly, in addition to other measures for increasing employment through small industries, it is proposed to organise a rural works programme, which will provide work for an average of say, 100 days in the year for about 2.5 million persons and, if possible, more. These programmes, and specially the proposal for rural works, will assist the general mass of the population and will also provide increased opportunities for the educated unemployed. The latter have, however, certain special problems of their own, which are briefly discussed in a later section of this chapter.

### III

#### EMPLOYMENT AND PLAN IMPLEMENTATION

18. From studies which have been undertaken, there is reason to believe that there are several ways in which it might be possible to secure larger gains in employment from the development programmes which are undertaken than has been the experience in recent years. It is common to analyse the problem of unemployment in terms of the country as a whole or in relation to large territories such as States. Sufficient attention has not been given to the possibilities of making a larger impact on the employment problem at the district and block levels. Every district has development programmes relating to agriculture, irrigation, power, village and small industries, communications and social services. These programmes are intended to raise the level of economic activity of the district and to increase production generally. Besides the direct employment they provide, many of the programmes are intended to stimulate individual farmers, artisans and small entrepreneurs and cooperatives to extend their activities and, in the process, provide additional employment. If full advantage is taken of these programmes and they are carefully adapted to the local needs, it should be possible to realise greater employment benefits at the district and local level. The unemployment problem in each State should, therefore, be broken down by districts, and at each level—village, block or district—as much of it as possible should be tackled. Such an analysis of local employment problems would enable the authorities to focus attention on and to raise resources for dealing with specific employment aspects, e.g. unemployed artisans and agricultural labourers, educated unemployed, etc. Since the problems in different areas are necessarily different, the employment approach at the area level will have to be worked out with a certain measure of flexibility to suit local conditions and resources.

19. The severity of employment problems makes it necessary to re-examine the scope that exists in individual construction projects for the increasing utilisation of manual labour. In the usual course, machinery is utilised in construction in cases where mechanisation would lead to considerable economies in terms of reducing costs and in shortening the construction period. It is necessary to emphasise on all project authorities that where mechanisation does not lead to significant economies preference must be given to labour-intensive methods of construction. These considerations should be kept firmly in mind at the time of preparing project reports and, wherever machinery is chosen in preference to men, convincing reasons should be given for such a choice. In fact, it is recommended that a standing committee of senior officers should be appointed to examine all such decisions from the employment angle.

20. In areas with heavy pressure of population, where even a large programme of development, such as must be undertaken still leaves a residue of unemployed, substantial numbers of persons should be imparted suitable skills and given opportunities of work in areas where these skills are not locally available in sufficient measures. It is proposed to undertake a few pilot schemes on these lines with a view to evolving the necessary techniques and organisation.

21. Although much has been done in recent years to promote village and small industries, a larger employment potential in this field still remains to be secured. In village and small industries, it is not enough to relate employment benefits to the new developments which are proposed to be undertaken. Much the greater part of the increase in employment has to be secured by realising the full potential of the existing small enterprises. For small-scale units of the modern variety, frequently the limiting factor is not the demand for the products as their ability to produce the quantities needed. This is specially true of industries requiring raw materials such as iron and steel, non-ferrous metals, yarn, chemicals including dyes, and others. In some cases, the lack of processing and other facilities may be a handicap. Almost everywhere, artisans and small entrepreneurs are not able to secure the credit facilities needed and do not have dependable facilities for the marketing of goods. Special efforts should, therefore, be made to enable small units (whether run by cooperatives of artisans or by individual entrepreneurs) to attain their maximum production potential.

22. Rural industrialisation and rural electrification are, in fact, connected programmes and are of the greatest importance for the expansion of stable employment opportunities in rural areas. It is necessary to develop centres or nuclei of industrial development in each area and link these with one another through improved transport and other facilities. These centres might be in small towns or in centrally

situated villages which are able to attract skills and enterprise and to which power and other facilities could be more readily provided. The Third Plan provides for a large programme of rural electrification. For rural electrification to make the necessary contribution to the growth of production and employment, there is need in each district for forward planning, both in the supply of power and for its utilisation. It is essential that the programme for agricultural and industrial development should be co-ordinated with the supply of power. Greater concentration of activity at selected points would bring about improvements in the load factor.

#### IV

##### UTILISATION OF RURAL MANPOWER

23. The proposal to undertake a comprehensive programme of rural works during the Third Plan, to which a reference has been made earlier, is significant not merely for creating the additional employment opportunities which are required, but even more as an important means for harnessing the large manpower resources available in rural areas for the rapid economic development of the country. During the Third Plan, agricultural production has to increase twice as fast as it did over the past decade. This calls for intensive and concentrated effort involving the participation of millions of families in programmes of agricultural development. For many years the greatest scope for utilising manpower resources in rural areas will lie in programmes of agricultural development, road development projects, village housing and provision of rural amenities. A lasting solution of the problem of under-employment will require not only the universal adoption of scientific agriculture but also the diversification and strengthening of the rural economic structure. Programmes for developing village and small industries, linking up the economy of villages with the growing urban centres, setting up processing industries on a co-operative basis, and carrying new industries into rural areas form part of the Third Plan and have to be further intensified. These programmes will be aided by the spread of rural electrification. While the rural economy is being thus built up, there is need for comprehensive works programmes in all rural areas, and more especially in those in which there is heavy pressure of population on land and considerable unemployment and under-employment.

24. Works programme envisaged for rural areas comprises five categories of works:

- I. Works projects included in the plans of States and local bodies which involve the use of unskilled and semi-skilled labour;
- II. Works undertaken by the community or by the beneficiaries in accordance with the obligations laid down by law;

III. Development works towards which local people contribute labour while some measure of assistance is given by Government;

IV. Schemes to enable village communities to build up remunerative assets; and

V. Supplementary works programmes to be organised in areas in which there is high incidence of unemployment.

Schemes under categories II, III and IV mentioned above are intended to be undertaken as a vital feature in the normal plans of development in rural areas. They are intended to ensure fuller utilisation of the manpower, and will also provide some, though necessarily limited, wage-employment. Wage-employment on a large scale has to be found in the main through works falling within categories I and V. Works in these two categories are in fact identical in nature, the main consideration being that category V will include supplementary schemes over and above those in category I. Thus, for the additional programme of rural works envisaged in the Third Plan, two main groups of schemes involving considerable use of unskilled and semi-skilled labour will have to be undertaken namely (a) local works at the block and village level and (b) larger works requiring technical supervision and planning by departments.

25. For local works as well as for the larger schemes it is essential that there should be clearly worked out programmes in each development block. The block plan will include all the works to be undertaken by different agencies through the block organisation such as programmes included in the schematic budget under the community development scheme, and those falling within the general plans of the States under agriculture, animal husbandry and cooperation, programmes for large and medium irrigation projects, road development etc.. In turn, the block plan must be split into village plans and, in this form it should be made widely known in the area. For projects like irrigation, soil conservation, road development etc. to provide the maximum employment to the people in each area, it is necessary that they should be carried out in close cooperation with the local block organisation. Since unemployment and under-employment are specially acute during the slack agricultural seasons, to the extent possible, works programmes should be planned for execution during these periods. In all cases of works to be undertaken in villages, wages should be paid at the village rates.

26. Following broadly the lines mentioned above, a scheme of pilot projects for works programmes for utilising rural manpower has been recently introduced, and 34 pilot projects have been so far taken in hand. The scheme of pilot projects provides for certain supplementary works programmes to be undertaken in addition to agriculture, irrigation, road

development and other programmes included in the State plans and the community development programmes. As a rough measure, a provision of Rs. 2 lakhs was suggested for each project for the period ending March, 1962. The pilot projects which have been begun include schemes for irrigation, afforestation, soil conservation, drainage, land reclamation and improvement of communications. The object of this series of pilot projects is to furnish experience in organising works programmes which will make some impact on the problem of unemployment and under-employment.

27. On the basis of the initial experience gained in the pilot projects, it is hoped to extend the programme on a mass scale to other areas, specially to those with heavy pressure of population and chronic under-employment. Tentatively, it is envisaged that employment through the works programmes should be found for about 100,000 persons in the first year, about 400,000 to 500,000 persons in the second year, about a million in the third year, rising to about 2.5 million in the last year of the Plan. Limited financial provision for the early phases of the programme has been made in the Third Plan. It is reckoned that the programme as a whole might entail a total outlay of the order of Rs. 150 crores over the Plan period. As the programme develops, it might be possible to consider ways of paying wages in part in the form of food-grains. It is proposed that the necessary construction organisations and the labour cooperatives needed, should be built up, specially at the block level. These organisations can carry stocks of tools, obtain contracts, secure the necessary technical and administrative assistance, organise cadres of trained and skilled workers, and work in close cooperation with district authorities, panchayat samitis and others. Voluntary organisations should also be able to provide local leadership and undertake educational and cultural work. To carry out the rural works programmes on the scale suggested above, adequate organisations are to be built up mainly in the States and also, to the extent necessary at the Centre.

## V

### EDUCATED UNEMPLOYED

28. The rapid pace of industrialisation during the last ten years has been accompanied by significant changes in the occupational structure of industrial employment. Industry now recruits persons who would formerly have been absorbed in 'white-collar' employment. Newer industries like iron and steel, chemicals, petroleum refining, general and electrical engineering, rubber tyres, aluminium, etc., are being developed relatively faster than older industries such as cotton textiles, jute and tea. The older industries, in turn, with an eye on meeting competition in the international market, have introduced schemes of rationalisation. Expansion programmes in industries, such as iron and steel, chemicals,



etc., involve the application of the latest and most efficient production techniques and, consequently, require a more technically qualified group of operatives. Increasing mechanisation in coal mining also requires personnel of a higher calibre than the older type of recruits in that industry. These developments may be expected to lead to larger employment opportunities for the educated. In judging the future prospects for the educated, this changing nature of the industrial scene has to be constantly kept in mind, and also the fact that attitudes to manual work are also undergoing marked change. The educational system will have to be geared to meet the rapidly changing pattern of personnel requirements. Manpower studies have been undertaken in a number of selected fields and arrangements have been made to suitably expand the existing facilities for technical education and to open new institutions, where necessary. It is expected that adequate facilities for practical in-plant training will be available in the wake of the apprenticeship legislation, now under consideration. Programmes of vocational guidance have been developed during the last 5 years, as part of the National Employment Service.

29. With the expansion of education at the secondary level, greater attention should be given to the absorption of educated persons into gainful employment. The problem of the educated unemployed may be considered in two parts—the backlog and the new entrants. The precise magnitude of the backlog is difficult to ascertain, but on the assumption that a constant proportion of the educated unemployed would have registered at employment exchanges, their total number might be estimated at nearly a million. The number of new entrants who have studied up to the school leaving standard or above, is estimated at about 3 million. Expansion in agriculture, industry and transport will provide a large and increasing demand for persons with skill and vocational or technical training. Reorganisation of the system of education and provision of facilities for technical and vocational education are, therefore, of paramount importance. In recent years, there has been a change in the attitude towards manual work on the part of educated persons, and programmes for orienting them to the requirements of the developing economy can be taken up on a larger scale than was hitherto feasible. A beginning in this direction was made during the Second Plan through the setting up of a number of orientation and training centres, and it is proposed to undertake a more broad-based programme during the Third Plan.

30. A significant proportion of educated persons registered as unemployed have had education ranging from the middle courses in schools to the first or second year at college. Young men belonging to this group cannot find adequate openings in urban areas unless they obtain technical training of some kind or other, and at best they can be absorbed to a

limited extent and in relatively low paid occupations. In the immediate future, it is in rural areas and through rural programmes that large employment opportunities for the educated unemployed are likely to become available. The rural works programme will itself make a large demand for persons with education, and it is proposed that as a preparatory step numbers of educated persons should be selected and put through short periods of training for specific jobs of work. The scope for regular and continuous employment within the rural economy will greatly increase with the development of co-operatives for credit, marketing and farming, growth of processing industries, development of scientific agriculture and the establishment of democratic institutions at the district, block and village level. It should also be possible to assist fairly large numbers of young persons with education to set up small industries at rural centres at which power can be made available. As far as possible, these industries should be organised on a co-operative basis, so that the necessary financial and technical guidance can be provided and the marketing of products organised. As the rural economy develops and the co-operative sector in it becomes larger, there will be increasing opportunity for employment at levels of income which are comparable in real terms with those available in the towns. Development along these lines has the additional advantage that rural areas will retain the services and the leadership of their own educated youth to a far greater extent than is now possible.

31. A brief reference may be made here to the need for re-deployment of skilled personnel from projects which have been completed or are nearing completion to those on which construction is to commence. It has been observed that irrigation and power projects as well as industrial projects have been obliged at times to retrench experienced labour when the construction programmes were not sufficiently dovetailed to take over labour from one project to another. During the Second Plan, the necessary machinery for this purpose has been created and has functioned satisfactorily. If work on similar projects is better phased and advance planning is undertaken, the size of the problem to be dealt with would be more manageable.

## CHAPTER XI

### PERSONNEL REQUIREMENTS AND TRAINING PROGRAMMES

#### I

##### MANPOWER PLANNING

Of all the resources for development, perhaps the most fundamental at the present time is trained manpower. Owing to the rapid advance in science and technology and the growing complexity of industrial and economic organisation, there is increasing demand for larger numbers of highly skilled and trained personnel drawn from different disciplines and functioning generally in composite teams rather than as individuals. As the economy develops, the requirements of individuals with more advanced and specialised training and of scientifically trained workers increase, while the need for persons at lower levels of skill and for the semi-skilled and unskilled steadily diminishes. It takes five years or more to give the basic training needed by an engineer or a doctor, and a much longer period to provide research and practical experience essential for filling positions of greater responsibility. To secure the required outturn of scientific and technical personnel and build up an adequate foundation of scientific research may take a nation, a whole generation.

2. In relation to the long-term economic development of a country, the extent of trained manpower available and the training facilities established constitute a major determinant of the measure of advance which can be achieved in different directions. As the economy grows, there has to be emphasis not only on numbers but also on quality and experience. Problems of producing the requisite trained manpower have to be seen in their broader context. On the one hand, they bear upon the character of education at each stage in school and college and on life in the home; on the other, they encompass the entire system of management and organisation in industrial and other undertakings, and the lines along which research is undertaken and its results applied.

3. In the context of programmes for the training of manpower, the demands of rapid economic development are like those of a national emergency. It calls for the reorganisation and expansion of existing institutions, development of large numbers of new institutions, special measures for obtaining and training teachers and instructors, introduction of new techniques for intensifying training and shortening the periods needed, expanding facilities for imparting practical training, and developing

new ways of making use of trained personnel as a scarce key resource. In the light of experience and assessment of the developing needs of the economy there must be constant re-examination of ideas and practices in vogue in the field of training. In manpower planning the economy has to be viewed as a whole, the entire range of facilities and possibilities available in all undertakings, whether public or private, being deemed to be at the service of the community. There is need to encourage experiment and innovation on the part of every organisation and training institution and to provide ever-increasing opportunities for original and creative activity.

4. Over the first two Plans valuable experience in manpower planning has been gained in several fields. There has been considerable expansion in facilities for the training of scientists, engineers and technologists, of agricultural, veterinary and health and medical personnel and of skilled craftsmen. Steel plants and other major industrial projects have made it necessary to take up large-scale training, both within the country and abroad, and in this other nations have also generously shared their experience and facilities. Trained personnel are required in large numbers, not only for the development of industry and transport and power but also in many other fields. Rural development programmes undertaken in community development and other areas have already involved large training programmes. As the role of democratic institutions at the district, block and village levels, of the cooperative movement, of municipal bodies and of voluntary organisations becomes more decisive in fields close to the welfare of the community as a whole, their need for trained personnel will become even more marked and much larger numbers of trained workers will be needed. Progress in education, health services, family planning and welfare programmes, as envisaged in the Third and later Plans, will also depend to no small extent on the adequate supply of teachers and other trained personnel.

5. In each field personnel requirements have to be estimated carefully and over a long period. This calls for improved statistical information, and development of techniques of manpower assessment so that the necessary estimates can be made with reasonable accuracy and a comprehensive picture built up for the economy as a whole. Estimates of personnel requirements have necessarily to be reviewed from time to time in the light of changing needs and experience. Manpower planning is, thus, an integral part of the economic plans formulated by the Central and State Governments and their agencies, and, within their own specific fields by industrial associations and other organisations representing different activities or interests as well as by individual undertakings and institutions, both public and private. They call for constant interchange of knowledge and experience and for special investigations. In view of the wide range of issues to be considered, and the

great importance of manpower planning for the country's future development, it is proposed shortly to set up an Institute of Applied Manpower Research, which will work in close collaboration with the Central and State Governments and with industrial and other organisations. Among the main aims of the Institute will be to provide a broad perspective of requirements of trained manpower for economic development in different fields, arrange for facilities for advanced training in manpower planning, develop methods for training and building up the existing work-force, evolve methods for identifying and developing talented persons and, generally, secure the most effective utilisation of the country's human resources.

6. As compared to the First Plan, the Second Plan presented problems of manpower planning on a much larger scale. To a considerable extent, profiting from the lessons of the Second Plan, steps were taken sufficiently in advance to secure trained personnel for the Third Plan. In many fields, though by no means in all, training programmes, which form part of the Third Plan, are designed to produce trained workers for the still more intensive development envisaged in the Fourth and later plans. There are still large areas in which personnel with adequate experience will not be available in sufficient number, and small numbers of trained and experienced persons will have to carry a disproportionate load. In these fields, while making the maximum use of the available indigenous personnel, there should be no hesitation in taking advantage of technical assistance programmes and other sources for obtaining such highly trained personnel as may be needed. Since the requirements of personnel are commonly reckoned chiefly in terms of assumptions and possibilities, based on past or current experience and unforeseen demands will continue to be thrown up on account of the rapid technological changes within the country and abroad and the growing needs of the economy, the present estimates are likely to need upward revision. It will be of particular importance during the Third Plan to reassess requirements in different fields from time to time and to take a view of these requirements not merely for the Fourth Plan, but also for the Fifth Plan. In this Chapter it is proposed to set out briefly the present estimates of requirements of personnel and the training programmes for which the Third Plan provides in such fields as engineering, technology and science, agriculture and rural development, education, health and social welfare, and statistics and administration.

## II

### ENGINEERING, TECHNOLOGY AND SCIENCE

7. Requirements of engineers and technicians may be considered at three principal levels—graduates, diploma holders and skilled craftsmen. In each group there has been rapid increase in the additions needed during each Plan period. On present estimates 51,000 additional engineer-

ing graduates are likely to be required for the Third Plan as compared to about 29,000 in the Second Plan; the demand in the Fourth Plan is estimated at about 80,000. Estimates for different branches of engineering are given in the Table below:

Table 1: Estimated additional requirements for graduates in engineering and technology

	Second Plan	Third Plan	Fourth Plan
civil engineering . . . . .	12400	13000	20000
mechanical engineering . . . . .	5300	15300	24000
electrical engineering . . . . .	5600	10500	17000
telecommunication engineering . . . . .	1600	2500	4000
chemical engineering . . . . .	2300	3500	7000
metallurgy . . . . .	700	1100	1600
mining . . . . .	500	1600	2400
others* . . . . .	1000	3500	4000
total . . . . .	29400	51000	80000

8. The additional requirements of diploma holders in engineering and technology in the Third Plan are estimated at about 100,000 compared to about 56,000 in the Second Plan; estimates for the Fourth Plan are at present placed at about 125,000. The break-up of the additions needed by different branches of engineering is shown in the following Table:

Table 2: Estimated additional requirements of diploma holders in engineering and technology

	Second Plan	Third Plan	Fourth Plan
civil engineering . . . . .	29000	39000	48000
mechanical engineering . . . . .	12200	26000	33500
electrical engineering . . . . .	10400	18000	22500
telecommunication engineering . . . . .	600	600	800
chemical engineering† . . . . .	800	3500	5000
metallurgy . . . . .	200	1100	1300
mining . . . . .	600	4000	5000
others* . . . . .	2000	7800	8900
total . . . . .	55800	100000	125000

\*Includes sugar technologists, jute technologists, leather technologists, architects and town planners, automobile, aeronautical, marine, public health and sanitary, and agricultural engineering personnel.

†Training at the diploma level is provided by sandwich courses at training centres for chemical operators.

9. With the stepping up of industrial development in the Third Plan and developments visualised for the Fourth Plan, the requirements of mechanical, electrical and chemical engineers will increase relatively faster than those of civil engineers. There will also be greater need for training specialists in branches like mining, metallurgy and other technologies. These changing trends will be taken into account while determining the distribution of the additional facilities for engineering education which are now being provided. In the course of the Third Plan the admission capacity of engineering colleges will increase from 13,860 at the end of the Second Plan to 19,140, the corresponding increase in polytechnics being from 25,570 to 37,390. Provision is also being made for part time and correspondence courses in engineering and technology. Estimates of requirements and out-turn of engineering personnel for the Third and Fourth Plans are indicated in the Table below:

Table 3: Estimated additional requirements and outturn of engineering personnel

	Second Plan		Third Plan		Fourth Plan	
	requirement	outturn	requirement	outturn	requirement	outturn
graduates	29000	26000	51000	51000	80000	80000
diploma holders	56000	32000	100000	82000	125000	127000

The shortage of diploma holders, which has been considerable during the Second Plan, will not be altogether made up in the Third Plan. The present plans need to be reviewed further from this aspect and in the light of more detailed information regarding the requirements of engineering personnel for major industrial programmes which is likely to become available as programmes are worked out. Estimates for the Fourth Plan are provisional and will be studied in greater detail with reference to the possibilities of long-term economic development indicated in Chapter II.

10. *Craftsmen.*—The requirements for craftsmen during the Third Plan are estimated at nearly 1.3 million, about 810,000 being in engineering trades and the rest in non-engineering trades. Several industries as well as establishments under the Railways, Posts and Telegraphs, Defence, etc., have their own training programmes. A proportion of skilled and semi-skilled workers are also trained through traditional methods, the skills being imparted from father to son. Facilities for institutional training at centres maintained by State Governments in collaboration with the Ministry of Labour & Employment, are, thus, required for a much smaller number. The number of industrial training institutes and centres has increased from 59 in 1955-56 to 167 in 1960-61, and the Third Plan provides for a further addition of 151. The intake capacity increased cor-

respondingly from 10,500 in 1955-56 to 42,000 at the end of the Second Plan, and will increase further during the Third Plan to 100,000. The apprenticeship training scheme, which was to be implemented by industry on a voluntary basis with a measure of support from Government, did not make much progress during the Second Plan. Legislation will be shortly introduced for placing apprenticeship on a compulsory basis. The programme for evening classes for industrial workers will also be extended.

11. *Inservice training programmes.*—Over the Second Plan inservice training programmes have been introduced by a large number of organisations, both public and private. These will be further enlarged. Thus, the major industrial enterprises have set up their own training schools, and some of them have also provided facilities for apprenticeship training. For the training of personnel at higher levels, the National Laboratories, the Atomic Energy Commission, the Ministry of Irrigation and Power, the Meteorological Department and others have arranged for special facilities.

12. *Scientific personnel.*—The National Register for Scientific and Technical Personnel maintained by the Council of Scientific and Industrial Research, carries about 106,000 registrations of whom Indians abroad account for nearly 5000. Of the number registered with the Council, about 33,000 are post-graduates in science subjects or graduates in agriculture, and about 66,000 are engineers and technologists both at the degree and diploma levels, the rest being specialists in medical profession. It is estimated that the coverage in the National Register is about 80 per cent of the total number of scientists. The "Scientists Pool" which has been maintained by the Council of Scientific and Industrial Research for the last three years for providing temporary placements for highly qualified scientists and others, especially those returning to India from foreign countries so far assisted the selection of 653 scientists and technologists. The following Table brings out the position of post-graduate scientists in India:

Table 4: Estimated additional scientific personnel

	total numbers in position in 1955	additional personnel in Second Plan
Mathematics and Statistics	5700	6300
Physics	4600	2200
Chemistry	7300	1700
Botany	2100	1400
Zoology	2300	1400
Geology	1300	1200
total	23300	14200



13. Enduring foundations for expansion of scientific education can be laid only through the provision of larger facilities for science education both in the secondary schools and at the university stage. The demand for scientists comes from many different directions—science teachers, maintenance engineers, research scientists, etc. Out of 27,000 teachers required for colleges in the Third Plan, as many as 17,000 will be scientists. There has been marked increase in facilities for science education in universities as may be seen from the following Table:

Table 5: Facilities for science education—enrolment

degree	1950-51	1955-56	1960-61
Bachelor of Science	32600	52300	84000
Master of Science	3800	6500	11300
Doctorate	630	1120	2000
total	37030	59920	97300

By the end of the Third Plan, science as an elective subject will be available in 9,500 secondary schools out of a total of 21,800 and at the university stage facilities will be provided for additional enrolment of about 230,000 students in science out of a total of about 400,000 students.

The need for scientists for fundamental and applied research and employment of scientists in other fields will have to be reviewed continuously during the Third Plan and increase in facilities considered in the light of such estimates.

### III

#### AGRICULTURE AND RURAL DEVELOPMENT

14. Programmes in agriculture and allied fields of development in the Third Plan entail a very considerable expansion in personnel. The necessary training facilities were developed to a large extent during the Second Plan, so that in most fields the demands at present anticipated are expected to be met with only a small increase in the facilities available. However, the possibility of the total demands under different heads increasing as the Plan proceeds has to be kept in view. Tables 6 and 7 below show the additional requirements of agricultural and allied personnel during the Third and Fourth Plans as at present estimated and the programme for expanding training facilities during the Third Plan:

Table 6: Estimated additional requirements of agricultural and allied personnel

	numbers in position in 1960-61	Third Plan additional require- ments	Fourth Plan additional require- ments
agricultural graduates . . . . .	14000	20000	30000
veterinary graduates . . . . .	5000	6800	7000
dairy technologists			
degree . . . . .	52	625	1150
diploma . . . . .	308	975	1150
forestry			
forest officers . . . . .	1100	480	600
rangers . . . . .	3000	1520	1900
fisheries			
administrative and statistical personnel . . . . .	460	1475	2410
fishery engineers . . . . .	150	240	
fishing boat personnel . . . . .	120	250	
technical shore personnel . . . . .	50	170	

Table 7: Additional training facilities in the Third Plan

	1960-61			1965-66		
	institu- tions	intake	outturn	institu- tions	intake	outturn
agriculture colleges . . . . .	53	4600	2300	57	6200	4500
veterinary colleges . . . . .	17	1300	1200	19	1460	1350
dairy technological institutions . . . . .	5	110	100	7	170	154
fisheries institutes . . . . .	2	50	50	3	80	75

15. *Agriculture*.—Besides the addition of 4 new agricultural colleges during the Third Plan, post-graduate courses are to be established in 5 existing agricultural colleges. For the training of farmers' sons, on the lines of the vocational agricultural school at Manjri in Maharashtra, 50 new institutions are to be set up. During the Second Plan an Agricultural University was established in Uttar Pradesh, and further proposals for setting up a few other Agricultural Universities are at present being examined. Agricultural Universities aim at bringing together a number of related fields of study, such as agriculture, animal husbandry, veterinary science, dairying, basic sciences and humanities, and at integrating teaching with research and extension work. To secure an adequate supply of qualified teachers for agricultural colleges, training wings are proposed to be set up at selected institutions. A Staff College for agricultural personnel in the senior and middle grades

is also to be established. The scheme of post-graduate fellowships will be extended during the Third Plan.

16. *Animal husbandry and veterinary science*.—Facilities for post-graduate education in veterinary science are to be developed at Izatnagar. To provide training in extension methods in animal husbandry, extension wings are to be attached to all veterinary colleges with provision for practical training at livestock demonstration farms.

17. *Dairying*.—Dairy development is a relatively new field in which only small numbers of trained persons are at present available. Facilities for training at the diploma level exist at Anand, Bangalore, Bombay, Karnal and Naini. They will also be developed at Haringhata in West Bengal. The Agricultural Research Institute at Anand will be developed into a degree college. Dairy technologists are being trained at the Central College of Dairying at Karnal. Short-term inservice training programmes as well as courses in dairying for the Master's degree and special refresher courses are to be organised at the National Dairy Research Institute.

18. *Forestry*.—In recent years there has been appreciable increase in training facilities for forest officers at Dehradun and for rangers both at Dehradun and at Coimbatore. The training facilities at the existing institutions will be augmented further with a view to meeting increased demand on account of Third Plan programmes.

19. *Fisheries*.—During the Third Plan, a Central Institute of Fisheries Education will be established at Bombay for providing training in all aspects of fisheries, including extension, statistics, marketing, etc. An institute of fisheries operatives will also be set up at Cochin. The existing Central Institutes for Inland Fisheries at Calcutta and for Marine Fisheries at Mandapam will be expanded.

20. *Soil conservation*.—In relation to the large soil conservation programme included in the Third Plan, the existing training facilities will need to be substantially strengthened, especially for extension personnel and field workers. The Plan at present provides for doubling the intake capacity of the training centre at Dehradun from 30 to 60, and increase in the capacity of the four existing research-cum-training centres at Kotah, Hazaribagh, Ootacamund and Bellary from 240 to 400. Some of the agricultural colleges also have plans for providing training in soil conservation.

21. *Community development*.—By October, 1963, the community development programme will have been introduced throughout the country. The programme now serves 3100 development blocks out of a total of about 5000. Having regard to the shortages existing at the end

of the Second Plan in certain categories, estimates of requirements for the Third Plan are as follows:

Table 8: Estimated additional requirements of personnel for community development programmes\*

	number
gram sevaks (village level workers)	21689
gram sevikas (women village level workers)	7869
extension officers	
agriculture	2081
cooperation	2648
animal husbandry	3494
rural industries	3712
panchayats	3677
overseers	2915
social education organisers	
men	1868
women	3741

With the introduction of Panchayati Raj, arrangements for the training of non-officials at training institutes, training camps, seminars, etc. are being developed further.

22. *Cooperation.*—In the course of the Second Plan, there has been considerable expansion in the facilities for training in cooperation. In 1960, there were in all 62 institutions for training junior cooperative personnel, 13 institutions for intermediate grades of personnel, and a college at Poona for senior personnel. For training non-officials in the cooperative movement, including office bearers and members of cooperative societies, 368 training units were sponsored by the All-India Cooperative Union. The training programmes for the Third Plan are described in the Chapter on Cooperation.

#### IV

#### EDUCATION, HEALTH AND SOCIAL WELFARE

23. *Education.*—The programme for education in the Third Plan involves an increase of about 61 per cent in the number of trained teachers in primary schools about 81 per cent in middle schools and about 40 per cent in secondary schools. With the completion of this programme, the proportion of trained teachers in each of these categories will rise only to about 75 per cent. Facilities for formal training are, therefore, being supplemented by further arrangements for refresher courses and inservice training.

24. Throughout the Second Plan there has been considerable shortage of teachers in science and in crafts. Four regional colleges are being established during the Third Plan with the object specially of training teachers in science and in special subjects. In universities and colleges also there

\*Exclusive of Block Development Officers and health personnel.

will be a large demand for science teachers. It is reckoned that of about 27,000 additional teachers in colleges required during the Third Plan, about 17,000 will be for science. Similarly, the expansion of technical education in the Third Plan will call for as many as 9000 additional teachers for engineering colleges and polytechnics. Various emergency and short-term measures are being taken to meet shortages of teachers until sufficient numbers become available in the ordinary course, but the situation is likely to remain difficult throughout the Third Plan, and, in some fields, greater use could be made of part-time and other professional personnel.

25. Facilities for training instructors in crafts for industrial training institutes and centres have been greatly expanded during the Second Plan. There are at present four central training institutes with a total capacity of about 550. The capacity of these institutes will now be increased to over 1000 and along with the three new institutes, which it is proposed to set up, the total capacity will increase to about 1800, outturn during the Plan period being about 8000.

26. *Health and medical personnel.*—For carrying out the Third Plan programmes, health and medical personnel, specially in ancillary categories such as nurses, midwives and health visitors will fall short of requirements. In Table 9 below proposals for increase in training facilities during the Third Plan are set out along with the position existing at the end of the Second Plan.

Table 9: Additional training facilities for health and medical personnel

	institutions	1960-61 intake	outturn	institutions	1965-66 intake	outturn
doctors . . . . .	57	5800	3200	75	8000	4830
nurses . . . . .	250	4000	2800	350	6200	4500
auxilliary nurse-mid- wives/midwives . .	420	5200	4000	550	9100	7000
health visitors . . .	30	650	375	50	850	500
sanitary inspectors .	28	2250	2250	38	2850	2850
pharmacists . . . .	10	550	480	15	1450	1270

In addition to the programmes above, the Plan also provides for increase in admissions each year to dental colleges from 280 to 400. Four new dental colleges will be set up and 10 existing institutions expanded. A problem which calls both for the rapid expansion of post-graduate education and for various short-term measures, is the shortage of teachers in medical colleges which is at present estimated at about 2000 and is likely to increase further.

27. *Family planning*.—Another important field in which it is urgent to secure additional personnel is family planning. To make family planning services available much more widely than at present, it is essential to provide the necessary family planning services at primary health centres. Large numbers of women workers and others have to be recruited and trained. The programmes which have been drawn up are likely to be inadequate and should be considered further.

28. *Social welfare*.—In welfare programmes such as are undertaken in community development blocks, tribal development blocks and welfare extension projects, frequently there are shortages of trained women workers. Welfare work among women and children, particularly in rural areas, has to be undertaken in the face of obvious difficulties, and workers have to be specially selected and trained. For attracting a sufficient number of women to take up such vocations as those of gram sevikas, nurses, health visitors, teachers and child welfare workers (bal sevikas) special attention should be given to working conditions, provision of residential accommodation, facilities for transport and opportunities for work with voluntary organisations like mahila mandals.

## V

### ADMINISTRATION, STATISTICS AND TECHNICAL ASSISTANCE

29. *Administrative services*.—The requirements of administrative personnel have increased steadily in recent years. It is indeed inevitable that each Plan should not only lead to substantial increase in the numbers needed, but should also place challenging burdens and responsibilities on the administrative as well as technical services. Thus, over the past decade, the authorised strength of the Indian Administrative Service has risen from about 1200 to well over 2000. In the Third Plan, the net additional requirements for the Indian Administrative Service are estimated at 400. Much larger increases are to be expected in the State Administrative Services whose responsibilities have already grown and will increase further with the development of Panchayati Raj institutions. The requirements of administrative personnel at different levels in the States are at present being studied. Along with these, a review is being undertaken of the existing arrangements for training and supervision and other aspects on which the quality of administrative personnel depends to a large extent.

30. Facilities for the training of administrators have been developed at the National Academy of Administration at Mussoorie, the Administrative Staff College at Hyderabad and the Indian Institute of Public Administration in Delhi. Some State Governments have set up their own institutions for the training of the State administrative and executive services. To assist personnel engaged in development in the States it is also proposed to work out a programme for training in the field of economic and social planning. It is proposed to establish two All-India Insti-

tutes of Management for the training of higher managerial personnel required for industrial undertakings, both in the public and in the private sectors.

31. *Statistical personnel.*—There has been considerable expansion in the demand for personnel with statistical training. Over the period of the Second Plan, the number of persons with statistical training and background employed with the Central and State Governments has increased from about 4000 to 10,000. The additional requirements for the Third Plan are estimated at about 6000. There will also be increased requirements in private industry and commerce. The Indian Statistical Institute at Calcutta, which is an 'institution of national importance' under the Act passed by Parliament in 1959, has introduced a four-year course for the degree of Bachelor of Statistics and a further two-year course for the degree of Master of Statistics. The Institute also provides for specialised professional courses and for post-graduate research degrees. The Central Statistical Organisation conducts inservice training courses for statistical officers working in the Central Ministries and in the States at senior and intermediate levels and also for junior Government personnel, besides imparting training in official statistics to batches of students from the Indian Statistical Institute. Training courses in their special fields are being provided by the Institute of Agricultural Statistics, the All-India Institute of Hygiene and Public Health, the Ministry of Education and the Forest Research Institute, Dehradun. State Statistical Bureaus arrange courses for in-service training for State statistical personnel at the intermediate and junior levels like district statistical officers, progress assistants in community development blocks and other field staff.

32. *Technical assistance.*—Technical assistance schemes under the United Nations, Colombo Plan, the Technical Cooperation Agreement with the U.S.A. and arrangements for training with a number of other countries such as U.S.S.R., France, Netherlands, etc., and with foreign universities and Foundations have provided valuable opportunities for training over a large range of specialised and advanced fields of study, and several thousands of Indians have profited from them. In turn, to the extent possible, India has endeavoured to share its training facilities with other countries. An effort has also been made to meet such requests as have been received for trained personnel from India. To derive the maximum benefit from the various technical assistance programmes under which facilities are made available to India, it is essential that the gaps in personnel which are at present anticipated should be precisely identified and the selection of trainees and the scope of the training to be provided should be determined on the basis of careful study of requirements over the period of the Third and the Fourth Plans. In turn, in augmenting her own training facilities and in building up cadres of trained workers, due account should be taken of the demands from other countries which India may be called upon to meet in different fields in the coming years.

## CHAPTER XII

### NATURAL RESOURCES

#### I

#### INTRODUCTION

UNDER its terms of reference, the Planning Commission was required to—

- (i) make an assessment of the material, capital and human resources of the country including technical personnel and investigate the possibilities of augmenting such of these resources as are found to be deficient in relation to the nation's requirements, and
- (ii) formulate a Plan for the most effective and balanced utilisation of the country's resources.

Accordingly, the First Five Year Plan presented an account of the land, water, mineral and energy resources of the country on the basis of information then available. It drew attention to the main problems in each field and set out programmes for further surveys and investigations. It also offered suggestions for strengthening the organisations responsible for these surveys, providing them with personnel and equipment, and expanding programmes of training.

Over the past few years organisations dealing with the survey and utilisation of natural resources, such as the Indian Council of Agricultural Research, the Central Water and Power Commission, Central Board of Irrigation and Power, Geological Survey of India, Oil and Natural Gas Commission, Indian Bureau of Mines, Survey of India, Forest Research Institute, Atomic Energy Commission, and the Council of Scientific and Industrial Research and its National Laboratories have been greatly expanded and have undertaken a series of new surveys and investigations. These surveys have resulted in a fuller assessment of the country's natural resources bringing to light the gaps in information relating to these resources as also their deficiencies in relation to the nation's future requirements.

2. The objective of planning is to raise the standard of living of the people as a whole. The attainment of this objective involves the development on scientific lines of the nation's natural and human resources.



Expanded demand for natural resources and materials has led to technological developments which have in part overcome limitations and thus increased the supply of resources. The dynamic forces at work in creating shifts in the demand for and supply of natural resources necessitate their continuous study as well as reformulation of policies relating to them. Natural resources must be looked at in a coordinated manner and their investigation and utilisation planned for long-term needs. The extent to which resources have been studied and possibilities established ahead of needs is an important factor determining the rate at which the economy can grow.

3. With the formulation of the Third Five Year Plan, the stage has reached when, as a necessary condition of well-conceived long-term plans, a comprehensive view needs to be taken of the extent and quality of the information available in respect of the country's main natural resources. The principal gaps which exist, the surveys required in this connection, and the further steps needed in relation to specific long-range objectives, such as irrigation, power, steel, coal, oil and minerals, land use and forest resources have to be identified. As stated earlier, over the next 15 years, population may increase by about 187 million. Increase in labour force is reckoned at about 70 million, of whom some two-thirds must be absorbed outside agriculture. It becomes, therefore, a matter of the greatest importance that a high rate of economic growth is achieved and sustained during this period. Her natural resources give India a large potential for agricultural and industrial production, and their rapid development is an essential condition for the achievement over the next two or three Plan periods, of a self-reliant and self-sustained economy which can provide to the mass of the people continually rising living standards and opportunities for gainful employment. The long-term goals in national and per capita incomes and the development of agriculture, irrigation and power, and the provisional targets suggested earlier for industries like steel, aluminium, coal, oil refining, fertilisers, cement and others can only be achieved in time if the nature and extent of the natural resources of the country and the essential requirements concerning their development are assessed and the necessary steps taken well in advance. For balanced development, it is equally necessary to assess availabilities, requirements and possibilities in relation to each of the principal regions within the country.

4. In the Chapters on irrigation and power, forests, industries, minerals and others, an attempt has been made to indicate the main directions in which further efforts are needed to ascertain more fully the resources of the country and the measures required for their more rapid development. The object of the present Chapter is to set the problem

of assessing and developing natural resources in the context of the Third and subsequent Plans and to explain briefly some of the implications in this respect of the growth of population and of intensive and large-scale industrialisation.

A unit for Natural Resources has been recently set up in the Planning Commission for studying problems relating to the assessment and development of natural resources and assisting the various agencies engaged in the survey and investigation of these resources in linking up their work closely with the requirements of the rapidly growing economy, and generally, helping in securing a common approach in various related fields. This unit will be strengthened as its work develops. In collaboration with other organisations, it is hoped to arrange for coordinated studies of natural resources on a continuing basis, to specify gaps in the existing information, particularly from the aspect of long-term development, and to suggest suitable policies and measures for giving effect to them. Against this background, it is proposed briefly to review recent developments and to indicate the problems that lie ahead in relation to the development of the land, water, mineral, energy and other resources of the country.

## II

### LAND RESOURCES

5. The most important natural resource of the country is land, which is the base for agricultural production. While population grows, the land surface is fixed, and of this only a certain proportion is available for cultivation. Several aspects of the problem need to be studied. Through irrigation and other measures of agricultural development, the productivity of land can be considerably increased. It is necessary to ascertain the extent to which land now lying waste can become available for cultivation. Increasing population also means withdrawal of areas now under farms for building houses. Development of communications such as roads, railways, and airways may take up fertile land. Owing to rapid urbanisation and growth of large cities land is needed for parks and open spaces. Irrigation dams may submerge fertile areas. Industrial plants and other establishments also require substantial areas. In all these developments wherever fertile land can be saved efforts should be made to do so. This indicates the need for a comprehensive inventory of land and for greater refinement in land classification and continuous attention to land use.

6. *Land utilisation.*—The total geographical area of India is about 806 million acres, of which reporting area is about 721 million acres and net area sown is about 318 million acres. The broad features of

the present pattern of land utilisation and that anticipated by the end of the Third Plan are set out in the Table below:

Table 1: Land utilisation in 1965-66

	(area in million acres)		
	1955-56	1960-61	1965-66
total reporting area . . . . .	720.0	721.0	721.0
forests . . . . .	125.6	131.0	132.0
land under miscellaneous tree crops and groves . . . . .	13.9	14.0	15.0
permanent pastures and other grazing lands . . . . .	28.4	32.0	32.0
culturable waste . . . . .	54.8	47.0	40.0
barren and uncultivated land and land put to non-agricultural use . . . . .	118.7	114.0	114.0
fallow lands other than current fallows . . . . .	30.9	28.0	26.0
current fallows . . . . .	29.5	28.0	25.5
net area sown . . . . .	318.2	327.0	335.0
area sown more than once . . . . .	44.4	51.5	67.0
gross area sown . . . . .	362.6	378.5	402.0

Availability per head of cultivable land in India is about 0.82 acres as against 0.42 in U.K., 0.48 in Germany, 0.17 in Japan, 0.50 in China, 2.68 in U.S.A. and 2.59 in U.S.S.R.

7. *Soil surveys.*—Until recently knowledge of soils in different parts of the country was inadequate and the necessary organisation for soil surveys had not been established. Appraisal of soil resources, involving survey and classification of soils provides the basis for assessing their potentialities as well as their limitations for effective exploitation and rational land use. The main object of soil surveys is to classify and map out the various types of soils, to know soil differences, and to coordinate knowledge of soils with a view to laying down standards of nomenclature, etc. With the aid of these surveys it becomes possible to prepare schemes for the better use of land and to plan for soil conservation and irrigation and drainage works. In 1955 an all-India soil survey scheme was initiated at the Indian Agricultural Research Institute with a view to carrying out reconnaissance soil surveys leading to correlation of soils of different regions. Soil correlation work involves classification and laying down of nomenclature of soils on a uniform basis and also the preparation of soil survey reports and soil maps. In the field of soil surveys, State Governments are specially concerned with aspects relating to agriculture, forestry, irrigation, drainage, soil conservation, etc. Since there are common soil problems covering more than one State and all States do not have their own soil survey organisations, with a view to coordinating work on soils, it was felt that the best course would be to set up laboratories on a regional basis for the four major soil groups occurring in India, namely, (1) at Delhi, for the

Alluvial Soil Region, (2) at Poona (now at Nagpur) for the Black Soil Region, (3) at Kharagpur (now at Calcutta) for the Red and Laterite Soil Region I, and (4) at Bangalore for the Red and Laterite Soil Region II. Three years after its inception, the scheme was integrated with the scheme for soil and land use planning drawn up by the Central Soil Conservation Board for the purpose of soil and land use survey in the catchment areas of six major river valley projects, namely, Machkund, Hirakud, Chambal, Bhakra Nangal, Kosi and Damodar, totalling about 78,000 square miles. Surveys in the catchment areas aim at classifying lands into capability classes essentially from the point of view of adopting soil conservation measures with a view to minimising soil erosion, preserving the top soil for cultivation and preventing sediment flowing into storage reservoirs, and thus increasing their life. Soil conservation work in the catchment areas involves detailed surveys in agricultural lands and reconnaissance surveys in other areas. The total area to be surveyed is about 500,000 square miles. By the beginning of 1961, an area of about 18,000 square miles had been covered by both detailed and reconnaissance surveys undertaken through the all-India scheme. Of this area, about 3000 square miles fall within the catchment areas of the river valley projects. Soil survey organisations in the States have surveyed about 50,000 square miles. Under the all-India programme, about 23,000 square miles are to be surveyed during the Third Plan.

8. *Survey of wastelands.*—Agricultural production can be stepped up through extension of area under cultivation by cultivating waste lands, double cropping of single crop areas, and other measures of intensive farming. There is considerable scope for extending the gross area sown by double cropping. It is anticipated that the area sown more than once might increase from about 52 million acres in 1960-61 to about 67 million acres by 1965-66. According to the available land utilisation statistics the area under culturable waste in 1955-56 amounted to about 55 million acres. In June 1959, the Government of India constituted a Committee to make a survey of land classified as "other uncultivated land excluding fallow lands" and "fallow lands other than current fallows" and to locate areas where large blocks of land are available for reclamation and resettlement. The Committee has completed its survey of seven States. In these, the area of wasteland available for cultivation in blocks of 250 acre or more is reckoned at nearly a million acres. The Committee's findings regarding the present statistics of wastelands are of considerable importance. On the whole the existing data are not sufficiently reliable, and lands classified as culturable waste at the time of settlement often continue to be shown as such in the revenue records long after they have come under cultivation. In the view of the Committee, the mere collection of statistics under the head 'culturable waste' can serve little purpose and

detailed information should be available about the types of wastelands in each State, the ownership of such lands, their availability in sizeable blocks and the cost of reclamation measures. The Committee has, therefore, recommended that rapid reconnaissance surveys should be conducted for collecting such information.

9. To sum up, there are large gaps in the information at present available regarding land resources. To secure quick results it is necessary that land surveys using photogrammetric techniques (aerial photographs) should be undertaken, and data on land use, land improvement, reclamation of water-logged, saline and alkaline lands and productivity should be collected in a systematic manner with a view to drawing up further plans.

### III

#### FOREST RESOURCES

10. Out of the total geographical area of 1.26 million square miles, about 274,000 square miles or about 21.8 per cent of the area consists of forests. Due to variations in climatic conditions and differences in altitude a large variety of natural vegetation ranging from temperate to tropical is found in the forests of India. Forests may be classified as follows:

Table 2: Classification of forests

	percentage
temperate forests	
coniferous	3
broad-leaved	4
tropical forests	
deciduous	80
evergreen	12
others	1

11. The productivity of India's forests can be greatly increased. Forests are among the few renewable resources in nature which, if properly managed, could go on yielding at undiminished rate and for an indefinite period. There is shortage of timber and fire-wood, of raw materials for drugs, paper and pulp and of fodder for cattle.

12. Wood and other forest products are basic raw materials essential for industrial development. In the past no proper appraisal of local forest resources was made and products such as paper or pulp, plywood, tannin, etc., were freely imported. With a view to developing such

industries in the country, an appraisal of the position of such raw materials is a matter of importance. The consumption of industrial wood in India is as low as 0.6 cft. per capita per year as against 16.0 cft. in France and 13.4 cft. in Japan. India's present requirements of industrial wood amount to 4.5 million tons and are estimated to be more than 9 million tons in 1975. As regards firewood resources, in the ordinary course, a demand of 100 million tons is anticipated by 1975.

13. It is essential that a sustained increase in production should be secured from year to year through intensive development schemes, including selection of high yield areas, planting of quick-growing species, introduction of improved logging and processing techniques, development of communications and more generally, the linking of forest development with specific schemes of industrial development to be undertaken over the next few years. While the requirements and supplies of industrial wood are still more or less balanced, it is considered that over the next 10 or 15 years unless special steps are taken, acute shortages might be experienced. This calls for measures for the intensification of production, development of hill forests, improved utilisation of low grade timbers, economy in fuel wood consumption and systematic surveys of forest resources in relation to specific industries. It is also necessary to undertake a survey of forest lands, indicating areas which are badly eroded, those fit for natural regeneration and those where planting should be undertaken. In some areas, specially in Central and South India, there are natural forests with trees which have only fuel value. These areas can be covered with valuable planted forests. There is need too for obtaining data regarding forest resources in inaccessible areas.

#### IV

##### WATER RESOURCES

14. Water resources may be divided broadly into surface water and underground water. Their development has to be viewed in relation to the need to increase the productivity of land through irrigation, flood control, drainage and other means and also to domestic and industrial requirements.

15. *Surface water.*—The annual rainfall over the entire country represents something more than 3000 million acre-feet of water. Of this amount, about 1000 million acre-feet are lost immediately due to evaporation and roughly 650 million acre-feet seep into the soil, leaving 1350 million acre-feet to flow into the river systems. The entire surface flow cannot be utilised because topography, flow characteristics, climate and soil conditions impose limits on usability. It has been estimated

that only 450 million acre-feet can be harnessed for purposes of irrigation. Progress in actual utilisation is as follows:

Table 3: Surface water utilisation for irrigation

	million acre-feet	as percent of usable flow	as percent of total flow
up to 1951 . . . . .	76	17	6
up to 1960-61 . . . . .	120	27	9
up to 1965-66 (anticipated) . . . . .	160	36	12

16. *Underground water.*—Of the 650 million acre-feet of water that seep down annually into the soil, about 350 million, acre-feet get absorbed in the top layers, thereby contributing to soil moisture which is essential for the growth of vegetation. The remaining 300 million acre-feet percolate down into porous strata and represent the annual enrichment of underground water. The total storage underground at any particular time may be several times this amount, but it can be assessed only if a country-wide investigation is undertaken. The actual utilisation of underground water at present is less than 20 per cent of the annual enrichment. Over the past eight years, through a series of ground-water exploration projects, efforts have been made to establish areas favourable to the sinking of tube-wells. For the Third Plan, a project including 500 exploratory borings has been accepted. With a view to facilitating the work of exploration and reducing the need for large-scale drilling, it is also proposed to carry out geophysical investigations. In peninsular India such investigations would quickly determine the depth of the bed rock and are likely to give first indications of ground-water availability. A survey programme is also in hand in Andhra Pradesh for localising areas of underground water where filter points for extraction of water can be successfully drilled.

17. *Utilisation.*—The major use of water is for irrigation and hydro-power generation, but water is also used for public water supply, industrial and navigation purposes. Water supply for irrigation can be obtained both from surface and underground resources.

18. The Central Water and Power Commission initiated in 1954 a study of different basins in the country for assessing the ultimate potential of major and medium irrigation projects. For purposes of this study the country was divided into five principal zones covering groups of river basins, and for each river basin the topography, rainfall, intensity of cultivation, possible storage sites, irrigable areas, reservoir capacity and other relevant factors were examined. Studies in respect of four zones are almost complete, while the fifth has still to be taken up.

A preliminary assessment places the irrigation potential of major and medium projects at 100 million acres (gross) distributed as follows:

Table 4: Irrigation potential of major and medium projects

	irrigation potential (million acres)
zone 1 : West-flowing rivers (covering river basins in Kerala, Mysore and Maharashtra States and the basins of Tapi, Narmada & others) . . . . .	10
zone 2 : East-flowing rivers (covering the basins of Tambraparni, Vaigai, Cauveri, Mahanadi, Godavari, Krishna, Pennar and others) . . . . .	33
zone 3 : Indus basin . . . . .	13
zone 4 : Ganga basin (covering Chambal, Jamuna, Ramganga, Tons, Gomti, Sone, Ganga and its tributaries) . . . . .	41
zone 5 : Brahmaputra basin . . . . .	3
total . . . . .	100

The net area irrigated by major and medium projects at the end of the Second Plan is about 31 million acres.

19. The first comprehensive attempt towards assessment of the minor irrigation potential was made in 1955 by the Minor Irrigation Committee set up by the Ministry of Food and Agriculture. Similar studies were later initiated by the Minor Irrigation Team of the Committee on Plan Projects. Some State Governments have also initiated minor irrigation surveys. A tentative appraisal of the data from these surveys indicates that the total ultimate irrigation potential of minor irrigation projects may be about 75 million acres (gross).

20. It will be seen that there is considerable scope for increasing the ratio of irrigated area to cultivated area. By realising the entire potential for irrigation of 175 million acres (gross) over the next 20-25 years (by which time the cultivated area may increase to about 350 million acres) the proportion of irrigated lands may perhaps rise to 50 per cent. Correspondingly, the amount of water utilised may go up to 350-400 million acre-feet or 60 per cent of the annual supply from both surface and underground sources. That will leave adequate quantities of water for meeting public supply, industrial needs and the requirements of thermal power generation the demand for which is likely to rise steadily.

21. *Industrial uses.*—The major uses of water in industry are for cooling, processing and boiler feed. Industrial needs of water are increasing rapidly. Hence the need to pay attention to methods of conservation and re-use of water in industries has become urgent. Most of the water used for industrial purposes is renewable in the sense that it becomes available for re-use if properly reconditioned.

22. One of the important problems associated with industrialisation and urbanisation is the pollution of available water supplies, specially rivers, by industrial effluents and trade waste. This leads, amongst others,



to mortality of fish and contamination of drinking water. Proper disposal of these wastes is difficult and costly. The problems which arise in this connection are being studied by the All-India Institute of Hygiene and Public Health, the Indian Council of Medical Research and the Public Health Engineering Research Institute. There is need for coordinated surveys and experimental work. These should cover analysis of effluents, data on extent of pollution caused by them, development of methods for their treatment and preparation of standards to which they should conform, before they can be discharged into rivers.

## VI

### FISHERIES

23. *Inland fisheries.*—Rivers and their tributaries, canals, lakes, reservoirs, tanks and ponds with perennial water supply constitute a rich potential source of inland fisheries. Out of 1·4 million tons of annual catch about 300,000 tons are from inland water. In the first Plan over a million acres of inland waters were surveyed and 68,000 acres reclaimed. In the Second Plan about 340,000 acres of inland waters have been surveyed and an area of 720,000 acres stocked. The Third Plan includes proposals for the development of more than 50,000 acres of water area as demonstration fish farms, 1500 acres for estuarine fish culture and reclamation of about 1500–2000 acres of marshy and fallow lands for fish culture. An urgent need is a complete survey of waters which do not dry up during summer and which can be stocked with fish. An inventory of the existing waters as to type, namely, ponds, reservoirs, lakes, rivers, etc. and the areas under each type should be prepared. This should be followed by a detailed inventory of the physical, chemical and biological features. When this work is completed, it will provide a sound basis for development of the inland fisheries resources.

24. *Marine fisheries.*—Out of the total fish production of 1·4 million tons annually about 1·1 million tons are marine. Of the marine fisheries, the most important are the mackerel, sardines and prawns. India's need is estimated at about 4 million tons but the production rate is only about a quarter of requirements. The sea fisheries generally exploited are confined to 6–10 miles from the coast.

India's marine fisheries resources have not been properly assessed and there is need for a comprehensive survey. The importance of this survey is underlined by the fact that the resources of the sea can supplement those of the land to a significant extent.

## VII

### MINERAL RESOURCES

25. Minerals play an important part in the industrial economy of the present day—some like coal and mineral oil are sources of energy, others

are raw materials for industry, while a few are the ultimate source of synthetic substitutes for natural materials like rubber, timber, cotton and others.

The country has fairly abundant reserves (in terms of volume) of coal, iron ore and mica, adequate supplies of ores of manganese, titanium and aluminium, raw materials for refractories and lime-stone, but there is deficiency in ores of copper, lead and zinc. There are no workable deposits of tin, nickel, molybdenum and elemental sulphur. Until recently, except for Digboi in Assam, mineral oil was not known to occur in other parts of the country.

26. *Coal*.—Coal is India's most important mineral asset and is the main source of commercial energy. Reserves of coal estimated for seams of thickness 4 feet and above are of the order of 50,000 million tons, of which coking coal accounts for 5.6 per cent, or about 2800 million tons. Inferred reserves are placed at 80,000 million tons. In addition about 2073 million tons of lignite are estimated to be available.

The coking coal reserves are a matter of concern in future. For every ton of steel 2.2 tons of coal are required. The rapid increase in the output of steel visualised during the next 15 years will increase the demand for coking coal. There is need to conserve carefully the limited reserves of coking coal. The position in regard to non-coking coal is not unsatisfactory, but since the bulk of the resources are of the low grade, economy in the consumption of better grade coal is essential.

The overall coal resources are highly concentrated. About 80 per cent of the present supply comes from a group of mines in a 200-mile section of Bihar and West Bengal, thereby making it necessary for coal to be hauled over distances of 400-1400 miles for consumption in Southern and Western India. Efforts are being made to increase production from coal-fields outside Bihar and West Bengal—their production increased from 5.7 million tons in 1951 (16 per cent of the total) to 10.2 million tons (20 per cent of the total) in 1960. By the end of the Third Plan the output of coal outside Bihar and West Bengal is expected to increase to about 28 million tons or 29 per cent of the total production in the country.

27. *Mineral oil and natural gas*.—Next to coal, petroleum and natural gas are major sources of commercial energy. So far India has not developed any considerable domestic petroleum supplies. However, intensive exploration for oil is under way. New oil wells in Assam are expected to produce about 2.75 million tons of oil per annum in the initial stages which is likely to increase by the end of the Third Plan. Considerable quantities of natural gas are found associated with petroleum in Assam and in addition there is non-associated natural gas also. Plans have been made for utilising the associated natural gas. Recent drilling operations

in Cambay and Ankaleswar areas have given encouraging results and the production from these areas may reach about 2·0 million tons by 1965-66.

The annual increase in the demand for petroleum products which was 4·5 per cent during the last decade is expected to rise to 10–11 per cent in the current decade. The total demand which was about 7·5 million tons in 1960 is expected to rise to over 11 million tons in 1965-66 involving a foreign exchange expenditure of over Rs. 50 crores for meeting the deficit of 5 million tons by imports. Household requirements (chiefly kerosene for lighting) represent about 25 per cent of the total consumption. The demand of the transport sector (diesel oil and gasoline) is more than 30 per cent. The share of industry is about 20 per cent mainly in the form of furnace oil. There has been a significant increase in the consumption of middle distillates comprising kerosene and diesel oil.

28. *Other minerals.*—Though the principal mineral regions have been ascertained and a broad indication obtained of the potential mineral wealth of the country, until recently no detailed investigations had been undertaken for a quantitative and qualitative assessment of the country's mineral resources. With the initiation of the planned development of the country attention was paid to systematic and detailed surveys and investigations by the Geological Survey of India, Indian Bureau of Mines, National Laboratories and Atomic Energy Commission with a view to a quantitative and qualitative assessment of the reserves of the more important minerals and their proper utilisation and the adoption of a policy aimed at systematic exploitation of minerals with due regard to conservation. As a result of surveys carried out during the last ten years, more information is now available of the extent of mineral reserves and their quality. Estimated reserves of manganese ore have now gone up from 20 million tons to 180 million tons. The assessment of sulphur-containing pyrites in Amjor area (Bihar) opens up the prospect of meeting a substantial part of demand of sulphur from internal production. Reserves of copper ore, iron ore, chromite, bauxite, magnesite, gypsum, limestone, lead and zinc, etc. have now been assessed and the gaps between requirements and availability determined.

The National Laboratories have carried out investigations with a view to improving the quality of minerals, making them usable (through investigations on the washing of coal, manganese ore, copper ore, etc.), finding uses for materials which would otherwise be wasted (as in the utilisation of scrap and waste mica) and substituting scarce metals by metals available within the country (for instance, nickel-free stainless steel and coinage alloys and aluminised steel wires).

29. The Mines and Minerals (Regulation and Development) Act, 1948 which was subsequently amended and elaborated in 1957, and the rules framed thereunder have brought a measure of uniformity in regard

to leasing of mineral properties and for ensuring systematic development of the mineral resources of the country. The Coal Mines Conservation and Safety Act, 1952 provides for the adoption and enforcement of methods of conservation in regard to coal.

30. Though in the recent past a considerable amount of work has been done in the study of mineral resources and in assessing reserves in quantitative and qualitative terms in particular areas, in the context of rapid industrial development of the country and the consequent increasing demand for mineral raw materials, exploration for and investigation of mineral deposits requires to be pursued with greater vigour in order to know more fully the minerals available and eventually their quality and quantity. The importance that has to be attached to this will become clear from the following Table which gives against the more important minerals the known reserves, the present production and the present demand thereof.

Table 5: Production and demand for minerals

mineral	unit	estimated reserves	present production	current consumption
coal (non-coking)	million tons	50000	37·07	51·8
coal (coking)	million tons	2800	14·87	
lignite	million tons	2073	negligible	negligible
mineral oil	million tons	not assessed	0·27	6·07
				1·37
manganese ore	million tons	180	1·2	0·3
iron ore	million tons	21870	10·5	8·0
chromite	million tons	2·3	0·10	0·02
vanadium ore	million tons	26·7	..	..
tungsten (metal)	tons	not assessed	3·0	3·0
nickel (metal)	tons	negligible	..	1020
ilmenite (titanium ore)	million tons	350	0·25	0·01
copper (ore)	million tons	32·9	0·44***	0·07 (metal)
lead ore	million tons	10·7@	3670 tons (metal)	0·03 (metal)
bauxite (aluminium ore)	million tons	260	0·38	0·10*
zinc ore	million tons		0·01**	0·06**
gypsum	million tons	1117	0·98	0·98
magnesite	million tons	100	0·15	0·14
limestone	million tons	15740	12·5	12·5
phosphatic nodules	million tons	2·0	..	..
apatite	million tons	0·87	0·014	0·22
tin (metal)	tons	negligible	..	4550
graphite	tons	not assessed	1500	2500
sulphur (element)	million tons	negligible	..	0·18
pyrites 40 percent S	million tons	384	..	..
asbestos	tons	580000	1683	30000

\*1959 figures

\*\*concentrates

\*\*\*equivalent to 8767 tons of metal

@includes zinc ore also

†crude  
‡product

31. Apart from the urgent necessity of more intensive exploration for minerals, there is need for enforcement of measures for conservation. Measures for conservation in relation to minerals will mean mainly avoidance of waste in mining and processing and in a large sense the substitution of scarce materials by those which are abundantly available in the country. Avoidance of waste in mining requires that there should be no selective mining—the richer and the poorer grades should be worked together and then blended to obtain a marketable grade. Upgrading of low grade ores (e.g. beneficiation of manganese ore, coal, copper ore, etc.) and utilising byproducts of mining and processing, (e.g. sintering of iron ore fines and utilising washery middlings) are also measures of conservation.

## VIII

### ENERGY

32. The demand for energy in India is growing rapidly due to industrialisation, increasing transport facilities and rising standards of living. India's consumption per head is still among the lowest in the world.

33. *Pattern of production and consumption.*—The total production of energy in India during 1960-61 was roughly of the order of 165 million tons of coal equivalent. The commercial sources of energy are coal, petroleum and falling water. Wind power and solar, geothermal and tidal energy may constitute future sources subject to appropriate technological developments. Nearly 61 per cent of the energy comes presently from non-commercial sources, such as cattle dung, wood, charcoal, farm wastes, etc. as will be apparent from the following Table. Amongst the non-commercial sources of energy, that from animate effort has not been taken into account. This has been estimated to be equivalent to 76 million tons of coal per year.

Table 6: Consumption of energy in 1960-61

source	energy consumed (million tons of coal equivalent)	as per cent of commercial energy	as per cent of total energy
coal	54.6	84.0	33.0
oil	9.5	14.6	5.8
water	0.9	1.4	0.6
total—commercial	65.0	100.0	39.4
cattle dung	46.0		27.9
fuel wood	35.0		21.2
agricultural wastes	19.0		11.5
total—non-commercial	100.0		60.6
total—all sources	165.0		100.0

34. *Non-commercial sources of energy.*—Dried cattle dung is the main source of energy for cooking and heating throughout the rural area and in many urban households as well. It has been estimated that the amount of cattle dung annually available is 1200 million tons (wet weight) of

which 400 million tons are used as fuel and 215 million tons as manure, the balance being wasted. On the basis of energy content, 400 million tons of dung is equivalent to 46 million tons of coal. Wood is used as fuel both for domestic purposes as well as by some industries either directly or in the form of charcoal. The fuelwood consumption of the country is estimated to be of the order of 60 million tons, which in terms of energy equivalent would be equal to roughly 35 million tons of coal.

35. *Commercial sources of energy.*—These include coal, mineral oil and natural gas which have been considered in the previous section, and electricity which is discussed below.

*Electric power.*—Large quantities of low grade coal and middlings will be available at collieries and washeries for generation of power. These locations are therefore well suited for coal-fired stations. Hydel stations take a long time to set up, involve relatively large outlays and are, by their very nature, located in relatively remote localities from which the power has to be transmitted over long distances. These are, however, the cheapest source of power. The break-up of generating capacity among different types of plants is indicated below:

Table 7: Generating capacity by source

	(million kilowatts)			
	1951	1956	1961	1966
hydel plant				
coal	0.56	0.94	1.93	5.10
oil	1.59	2.27	3.46	7.08
nuclear	0.15	0.21	0.31	0.36
total	2.30	3.42	5.70	12.69

Currently, the electric energy consumption in India is about 45 kWh per head of population. In 1950, it was 14 kWh and in 1958, 35 kWh and by 1965-66 this is expected to increase to about 95 kWh per capita. This rate of increase will need to be maintained for a long period. Compared to other countries India's consumption is extremely low. In Japan per capita consumption rose from 455 kWh in 1947 to 930 in 1958; in Italy during the same period it rose from 454 kWh to 928.

*Water power.*—The potential of water power has been generally estimated to be about 41 million kW distributed as shown below:

Table 8: Water power potential

	(million kW)
west-flowing south Indian rivers	4.35
east-flowing south Indian rivers	8.63
central Indian rivers	4.29
rivers of Ganga basin	4.83
rivers of Indus basin	6.58
Brahmaputra and others	12.49
total	41.17

However, extensive surveys of individual project sites involving contouring, reservoir areas, flow characteristics, availability of local construction materials, etc., have to be undertaken before this potential can be more definitely assessed and harnessed. In the Third Plan 64 specific project sites are proposed to be investigated.

*Nuclear energy.*—For a self-sufficient atomic energy programme an adequate supply of fuel material is a prerequisite. It has been known for several decades that in the monazite sands found on the beaches of the Kerala and Madras coasts India has one of the largest deposits of thorium in the world, containing no less than 200,000 tons of thorium in a concentration of over 9%. As a result of the work of the Atomic Minerals Division, during the period of the Second Plan an even more extensive monazite deposit has been discovered in the State of Bihar which contains no less than 300,000 tons of thorium in a concentration of over 10%. India thus has the largest known thorium reserves in the world equalling in amount the total world reserve of uranium. Several deposits of uranium also have been discovered in various parts of the country, which are still being proved by drilling. A deposit containing several thousand tons of uranium has, however, been established in Bihar and steps are being taken to open up a mine to produce a thousand tons of ore a day. Nuclear power plants are expected to make a progressive contribution towards meeting the growing demand for power.

36. *Unconventional sources of energy.*—Attempts to convert primary forms of energy such as solar radiation, wind motion, tidal energy, heat of the earth and oceans, etc. are being made in different parts of the world. Of the several devices developed so far, solar house heating, solar batteries and wind power generators have proved reasonably successful in many places. Tidal motion has also been harnessed in some countries.

In India, work has been done on the development of a solar cooker, a solar evaporator and prototype windmills. A great deal of research and experimentation and several years of development work go into every device meant for catching the energy of the sun, wind or tides in an efficient and economical manner. Research schemes for tapping unconventional sources of energy should be developed.

## IX

### RESOURCES OF THE SEA

37. India has a coastline of about 3530 miles, a continental shelf of more than 10,000 square miles and a large number of gulfs and bays along the coast. This alone indicates the vast possibilities of marine resources in the form of marine algae, fish and other edible animals as well as

minerals. Oceans are huge reservoirs of organic material and photosynthesis occurs in them at greater rate than in forests or grasslands. The importance of marine fisheries has already been stressed. Marine algae (seaweeds) are a promising source of food which still remains unexploited in India. Sea-weeds are also the source of agar agar, alginates, mucilages and iodine. Some of them can be used for making jams, jellies, etc. for human consumption. Addition of sea-weeds to cattle feeds in other countries has proved remarkably beneficial due to the presence of trace elements which the farm animals generally lack. Similarly, incorporation of seaweed-cowdung compost to soil proved much more beneficial to crops than cowdung alone. A preliminary survey conducted by the Central Marine Fisheries Research Station, Mandapam, indicates that systematic exploitation of sea-weeds could be quite profitable. There is need for a comprehensive survey of the availability of economic sea-weeds on India's coastline and their utilisation.

38. Mineral resources from the sea hold considerable promise. Of these, the most important is the common edible salt. Its production in 1958 was about 4.2 million tons valued at about Rs. 8.5 crores. At present very little use is being made of salt bitterns which are a source of magnesium chloride, potassium chloride and bromine. Against a possible quantity of a million tons, only 8000 tons of magnesium salts are recovered. Only a few hundred tons of potassium chloride are recovered against a possible total of 90,000 tons. Similarly, bromine is recovered to the extent of 25-30 tons against a possible total of several thousand tons. The ocean is likely to become the major source for sodium, potassium, magnesium, bromine and chlorine. A recent development is the possibility of recovering manganese, cobalt, nickel, copper and thorium from nodules that occur on the deep sea floor. So far no surveys have been made to estimate the mineral resources of the ocean bed.

## X

### SURVEYS AND PROGRAMME OF WORK

39. The Survey of India, the Botanical Survey and the Zoological Survey have been strengthened under the first two Plans and have undertaken extensive surveys in their respective fields. Thus, the Survey of India has carried out surveys in connection with the multi-purpose river valley projects, oil refineries, coalfields and the lead-zinc zones in Rajasthan. The Botanical Survey of India was engaged in exploring plant resources of the country. The Zoological Survey has been engaged in collecting scientific information regarding animals, fish, birds, insects, etc. and its studies are of great importance in the fields of public health agriculture and forestry.



40. The Council of Scientific and Industrial Research and the National Laboratories have undertaken a number of important surveys. Among these, mention may be made of studies of wind velocity, tanning materials to replace imported wattlebark, road materials, medicinal plants, raw materials for glass and ceramics, refractories, paper and pulp, and food and agricultural wastes and their utilisation.

41. Several surveys of a regional character have been undertaken in recent years and some are in progress. Under the auspices of the Planning Commission, the Indian Statistical Institute has carried out a pilot regional survey of Mysore and also a less elaborate survey of the State of Kerala. A diagnostic survey of the Damodar region is being carried out jointly by the Institute of Technology, Kharagpur and the universities of Calcutta and Patna. The survey is potentially of great importance for the planning and development of the Damodar Valley area. The National Council of Applied Economic Research has, at the instance of the State Governments concerned, undertaken techno-economic surveys of the States of Andhra Pradesh, Assam, Bihar, Kerala, Madhya Pradesh, Madras, Mysore, Orissa, Punjab, Rajasthan and West Bengal. It has also completed for the Government of India surveys of the Union Territories of Himachal Pradesh, Manipur and Tripura. These surveys bring together a considerable body of information and will be of use as bench marks for later studies. They also indicate possibilities of development which need to be studied further. The survey of the metropolitan region of Delhi, completed recently, has value not only for the development of the region but also as a pioneering effort of interest to other large towns. A similar survey is proposed to be carried out for Calcutta.

42. Natural resources cover a most extensive field and, within the compass of a short chapter, it is not possible to do more than touch upon a few broad features of the subject. Over the past ten years, a great deal of new information regarding the country's natural resources has become available. The principal organisations engaged in surveys of resources are now equipped with personnel and expertise to expand their activities even more rapidly in the future. States are also more fully seized of their own problems of resource development. Considerable numbers of highly trained scientists and technologists are already engaged in studies relating to resources. There is growing recognition of the need for conservation of natural resources in all fields, but in this direction much still remains to be done. A great deal of valuable scientific research is being undertaken for resource location and resource utilisation in the National Laboratories, in the universities and in other research establishments. Technological changes are already transforming the economic life of the country. With economic development, there will also be greater technological progress and many new possibilities will open up. The preparation of a long-term plan of economic development,

stretching over the next fifteen years and more can serve as a common thread to hold together and help interpret the results of scientific research and the growing knowledge being gained of the country's resources. It will also point to gaps that exist and suggest new problems for study. The task ahead is one of considerable magnitude and will call for continuous cooperation between the Planning Commission, the various research organisations of the Central Government, Departments in the States, leading institutions engaged in scientific and economic research and the universities. The potential for development of India's natural resources is vast; with systematic study and exploration of these resources and the increasing application of science and technology in their assessment and utilisation, the possibilities of economic growth may be enlarged far beyond the present anticipations.

## CHAPTER XIII

### COOPERATION

#### COOPERATION AND PLANNED DEVELOPMENT

IN a planned economy pledged to the values of socialism and democracy, cooperation should become progressively the principal basis of organisation in many branches of economic life, notably in agriculture and minor irrigation, small industry and processing, marketing, distribution, supplies, rural electrification, housing and construction, and the provision of essential amenities for local communities. Even in medium and large industries and in transport, an increasing range of activities can be undertaken on cooperative lines. The socialist pattern of society implies the creation of large numbers of decentralised units in agriculture, industry and the services. Cooperation has the merit of combining freedom and opportunity for the small man with benefits of large-scale management and organisation as well as goodwill and support from the community. Thus, a rapidly growing cooperative sector, with special emphasis on the needs of the peasant, the worker and the consumer becomes a vital factor for social stability, for expansion of employment opportunities and for rapid economic development. Along with a growing public sector and a private sector which functions with responsibility to the community as a whole, the influence of cooperation extends far beyond the particular activities organised on cooperative lines, and gives to the social structure and the national economy, balance, direction and a sense of values.

2. Economic development and social change are equally vital elements in the reconstruction of India's social and economic structure. Cooperation is one of the principal means for bringing about changes of a fundamental nature within the economy. As was stated in the Second Five Year Plan, in a country whose economic structure has its roots in the village, cooperation is something more than a series of activities organised on cooperative lines; basically, its purpose is to evolve a scheme of cooperative community organisation which touches upon all aspects of life. Within the rural economy, in particular, cooperation is the primary means for raising the level of productivity, extending improvements in technology and expanding employment so as to secure the basic necessities for every member of the community.

3. At the level of the village, cooperation implies the development of land and other resources and various services in the common interest of the village as a whole and a continuing obligation on the part of the

village community towards all its members. It is, therefore, visualised that as part of a larger cooperative rural economy, the broad aim of policy should be to develop the village as the primary unit of organisation in agriculture and in many other economic and social activities which bear closely on the welfare of the rural population. At the same time, artisans and others, according to their community of interest, will enter into cooperative associations which seek to serve their special needs. Programmes for land reform and for village and small industries, development of panchayats and the fundamental emphasis in community development on the obligations and functions of the community, all point in these directions. In due course, as the agricultural base is strengthened and efforts to diversify the occupational structure of rural areas are intensified, an increasing number of cooperative activities will call for organisation for larger areas. Once the processes of social and economic change gather force and the rural community attains higher levels of skill and productivity, cooperation has to meet larger and more complex demands. Diverse forms of cooperative organisation will continue to develop in tune with new needs and possibilities.

4. Over the past year, policies for the development of cooperation have been carefully reviewed in relation specially to the programmes for the Third Five Year Plan. The conclusions reached regarding the lines along which cooperative credit and cooperative farming should be organised form the basis of programmes for the Third Plan. The Third Plan provides for specific programmes for cooperative credit and supplies, for marketing and processing, for consumer cooperatives and for industrial and other cooperatives. These are but different directions of activity, each important in itself, yet forming an integral part of a larger effort aiming at the development of a growing cooperative sector in India's economy.

5. For the development of cooperation, the Third Plan provides Rs. 80 crores as against the estimated expenditure of Rs. 34 crores in the Second Plan.

#### COOPERATIVE CREDIT

6. In November, 1958, in its Resolution on Cooperative Policy, the National Development Council agreed that cooperatives should be organised on the basis of the village community as the primary unit, and that responsibility and initiative for social and economic development at the village level should be placed fully on the village cooperative and the village panchayat. The cooperative and the panchayat were to be regarded as the primary agencies for carrying out the community development programme which aims at the improvement of all aspects of rural life through the efforts of the people. The village agricultural plan was

considered to be the foundation of the programme for cooperative development and was to be given the highest priority.

7. Since these decisions were reached, problems relating to the development of cooperative credit in the context of the larger needs in the Third Plan were examined by the Committee on Cooperative Credit. In September, 1960, the National Development Council considered proposals based upon the report of this Committee, and agreed that while, as a general rule, cooperatives should be organised on the basis of the village community as a primary unit, where villages were too small, the number of villages to be served by a cooperative society could be increased in the interest of viability. The aim should be to ensure viability with the inclusion of the smallest number of villages necessary, so that cooperative societies could achieve both viability and the essential characteristics of cooperation, namely, voluntary basis, close contact, social cohesion and mutual obligation. However, such extension should be subject to certain maximum limits, namely, a population of 3000 (that is, 600 families or about 500 cultivators' families) and a distance of not more than 3 or 4 miles from the headquarters village.

The broad test of viability should be the ability on the part of a cooperative society to meet the requisite expenses without depending upon financial assistance from Government except for a limited period. However, potential viability should always be assessed on the basis of a programme for fulfilling certain essential conditions, such as bringing into the cooperative all rural families, effective implementation of the village agricultural production plan, linking credit with production and with marketing, supervision of the use of credit, undertaking the functions of distribution and supply, and attracting local savings to the maximum possible extent as share capital and as deposits. While a population of 3000 might ordinarily be too high for a primary village society, it was considered desirable to avoid laying down unduly rigid rules on the subject of organisation and size of cooperative societies. Within this broad framework, cooperative societies should be allowed to develop on their own. Particular care should be taken to ensure that existing societies were not interfered with merely because they did not strictly comply with the pattern of organisation now envisaged. The aim should be gradually to fit them into the new arrangements.

8. The pattern of organisation set out above was to be supported under appropriate conditions by State participation in share capital. The State could participate in the share capital of a primary society only if 60 per cent of the members desired this, and the proposal was supported by the central bank to which the society was affiliated. The State's contribution had to be matched in equal measure by the members of the society, the maximum contribution from the State being generally placed

at Rs. 5000 and, in exceptional circumstances, at Rs. 10,000. The amount to be provided by the State could be retained for a period of 5 to 8 years and retired later. As a normal rule, State participation in primary societies should be indirect, that is, through apex and central cooperative banks. Where, for special reasons, State participation in share capital is direct, nomination of directors to the managing committees of primary societies should be avoided. If such nomination is considered essential, the authority to nominate directors should be delegated to central cooperative banks.

To enable cooperative societies to admit all classes of cultivators, including marginal and sub-marginal cultivators, landless tenants, etc. as members, and provide them with adequate credit on the basis of their production requirement and repaying capacity, it was also agreed that State Governments should make an outright contribution to the funds of each society at 3 per cent of the additional loans made during the year over those advanced by it in the preceding year. An outright contribution of 1 per cent to bad debt reserves should be made to central cooperative banks in respect of the additional finance provided by them. In the intensive agricultural districts, where credit is sought to be made available to the full scale of production requirements, the outright grants are at a slightly higher level, being 4 per cent for primary societies and 2 per cent for central banks. The continuance of these outright grants is contingent on the condition that the weaker sections of the community, who have hitherto been unable to get adequate credit, should now receive the necessary assistance. The outright grants received by primary societies and central banks were to be credited by them to special bad debt reserves which would be in addition to the normal bad debt reserves created from profits. It is envisaged that at an appropriate stage, a careful assessment of the extent to which outright grants have led to the extension of credit facilities, should be undertaken.

9. Besides participation by the States in the share capital and outright grants for special bad debt reserves, new service cooperatives and existing cooperatives which take up approved programmes for strengthening and revitalisation, increase of membership, share capital, linking credit with marketing, etc. receive a management grant upto a maximum of Rs. 900 spread over a period of 3 to 5 years. The management grant is intended to be given only to those societies which actually undertake various service functions, namely, disbursement of credit, supply of production requisites, and arrangements for marketing of agricultural produce.

10. Over the period of the first two Plans, the number of primary agricultural credit societies has risen from about 105,000 to about 210,000 and their membership has gone up from 4.4 million to about 17 million. Over this period the total loans advanced by primary agricultural societies have risen from about Rs. 23 crores to about Rs. 200 crores. As the

following statement will show, progress during the Second Plan was more marked than during the First.

Progress of primary agricultural credit societies—First and Second Plans

period	societies (numbers)	membership (million numbers)	short and medium- term loans advanced (Rs. crores)
<b>First Plan</b>			
1950-51	104993	4.4	22.9
1955-56	159939	7.8	49.6
<b>Second Plan</b>			
1956-57	161510	9.1	67.3
1957-58	166543	10.2	96.1
1958-59	182905	11.9	125.5
1959-60	203172	14.4	169.1
1960-61 (estimates)	210000	17.0	200.0

During the Second Plan, in respect of long-term credit, the amount of loans outstanding increased from about Rs. 13 crores to about Rs. 34 crores.

11. In formulating programmes for the expansion of cooperative credit during the Third Plan, the main consideration has been to ensure adequate support to the effort to achieve the large agricultural targets set in the Plan. The Plan envisages that the membership of primary cooperative societies will increase to about 37 million covering about 60 per cent of the agricultural population. The number of societies is expected to increase to about 230,000 so as to serve all the villages in the country. It is estimated that the total amount of short and medium-term credit may increase to about Rs. 530 crores and that of long-term credit (loans outstanding) to about Rs. 150 crores. Statements I and II in the Annexure set out briefly the existing position in respect of short and medium-term credit and long-term credit in different States at the end of the Second and Third Plans.

12. The agricultural programmes in the Third Plan lean heavily on the success of schemes for strengthening the cooperative movement. Of about 160,000 primary societies existing at the end of the First Plan, a large proportion were functioning in a dormant or in a poor state. In the course of the Second Plan about 42,000 societies were taken up for revitalisation. Programmes for the Third Plan provide for the revitalisation of about 52,000 primary societies. Revitalisation of the older societies which were functioning badly and the further expansion of the movement will depend largely on the extent to which primary credit societies succeed in increasing their membership, mobilising local savings, improving management and linking credit with marketing and with production. These measures are essential for strengthening the internal

resources of the credit organisations, both at primary and at higher levels. In those States in which the cooperative movement has remained weak, it is important to undertake the necessary consolidation or revitalisation as a first step in implementing programmes for the Third Plan.

13. The Plan visualises a large increase in the internal resources of the cooperative movement at various levels. Thus, the share capital of primary cooperatives (other than State contribution) is expected to increase from about Rs. 42 crores in 1959-60 to Rs. 85 crores in 1965-66, in central cooperative banks from about Rs. 23 crores to about Rs. 62 crores, and in apex banks from about Rs. 9 crores to about Rs. 33 crores. It is also estimated that between 1959-60 and 1965-66, deposits of primary cooperative societies should increase from about Rs. 12 crores to about Rs. 42 crores, of central banks from about Rs. 95 crores to about Rs. 212 crores and of apex banks from Rs. 60 crores to Rs. 142 crores.

14. Short and medium-term credit provided by service cooperatives caters to the current needs of production. Credit for longer periods for increasing the productive capacity of land is equally essential. This need has to be met in the main by cooperative land mortgage banks. At the end of the Second Plan almost all the States had central land mortgage banks or special land mortgage banking department attached to the apex cooperative bank. In 1959-60 there were 407 primary land mortgage banks. To these it is proposed to add 265 new primary land mortgage banks during the Third Plan. Debentures constitute the principal source of funds for loans advanced by central land mortgage banks either directly or through their affiliated primary banks. The achievement of the target for long-term credit to the extent of Rs. 150 crores (loans outstanding) will depend to no small extent on the support which land mortgage banks receive from institutional investors and the success of rural debentures. In this field a very large measure of assistance has to come from national institutions like the Reserve Bank of India, the State Bank of India and the Life Insurance Corporation.

15. With a view to augmenting the resources available for long-term loans, a proposal for setting up an Agricultural Development Finance Corporation is at present being considered by the Reserve Bank of India in consultation with the Central Government. The Corporation will purchase debentures floated by central land mortgage banks in the normal course and will also provide funds for schemes for increasing agricultural production which are remunerative in character, but involve considerable investment or long periods of waiting, such as rubber, coffee, cashewnut and arecanut plantations, irrigation, contour-bunding and soil conservation, and development of orchards and fruit gardens. The loans advanced by the Corporation will be channelled through the central land mortgage banks.



16. The Reserve Bank of India has played a very significant part in the building up of the cooperative movement during the first two Plans through its supervision over financial institutions, arrangements for training, loans to States for participation in the share capital of cooperative banks, and advances to cooperative banks, its loans outstanding having risen from about Rs. 14 crores in 1955-56 to about Rs. 85 crores in 1959-60. In keeping with the growing requirements of the economy and the agricultural objectives and credit needs in the Third Plan, the Reserve Bank will be called upon to play an even larger role. The Bank has necessarily to relate its advances to the financial strength and administrative efficiency of the borrowing institutions and, at the same time, to take account of factors such as supervision of the utilisation of loans, and past performance in their recovery. It has also to consider the extent to which the cooperative structure in each State succeeds in mobilising deposits and in building up its own resources. Special efforts are being made by the Reserve Bank to assist the State Governments in reorganising the financial structure of the cooperative movement in States in which inadequate progress has been made during the first two Plans.

17. The State Bank of India has also been of considerable assistance to the cooperative movement. Following a policy of responsiveness to the financial needs of cooperative institutions, specially those engaged in marketing and processing, the State Bank has provided free remittance facilities and loans on easy terms and conditions. It has also given support to the operations of land mortgage banks by subscribing to debentures issued by them from time to time and affording interim accommodation for short periods pending the floatation of debentures. With the enlargement of operations of marketing and processing societies, on the one hand, and extension of the network of the offices of the State Bank and its subsidiaries on the other, the policies and procedures which have been evolved should enable the Bank to expand its assistance to cooperatives on a much larger scale during the Third Plan.

#### COOPERATIVE MARKETING

18. Development of cooperative marketing was given a place of special importance in the scheme of integrated rural credit recommended in the Rural Credit Survey. Primary marketing societies were to be established at important markets or at other suitable centres and primary agricultural credit societies were to be affiliated to them. Marketing societies were to be assisted with personnel and the State was to participate in their share capital. Broadly on these lines, during the Second Plan, 1869 primary marketing societies have been assisted through the National Cooperative Development and Warehousing Board. With the addition of about 600 more primary marketing cooperatives proposed to be set up during the Third Plan period, there will be a marketing society at or

near each of the 2500 mandis in the country. Besides these marketing societies, reference may be made to sugarcane supply societies which exist in large numbers, particularly in Bihar and Uttar Pradesh, cotton ginning and pressing societies which have developed most successfully in Gujarat and Maharashtra, and milk supply unions and societies which have come up in recent years in several States.

19. In addition to their role in the sale of agricultural produce on terms favourable to the producer, marketing societies are intended to serve as distributors of articles required by cultivators for agricultural production. They are also essential for linking up the grant of agricultural credit with marketing. Statistics concerning the activities of marketing societies are inadequate in several respects. However, it is estimated that the total volume of agricultural business conducted by marketing societies may at present be of the order of Rs. 200 crores. Their marketing operations are expected to rise to about Rs. 400 crores. Efforts will be directed towards handling by cooperatives of a steadily increasing proportion of the marketable surplus of foodgrains and commercial crops. Participation by cooperatives in the export trade will also be encouraged. Marketing societies receive finance from cooperative financing agencies and also to an increasing extent from the State Bank of India. Their principal problems are to secure sufficient finance for current operations, to improve management and to ensure continued support from their members. Price stabilisation policies will greatly facilitate the growth of cooperative marketing and the expansion of credit. At the instance of the National Cooperative Development and Warehousing Board, the special problems of cooperative marketing in relation to jute in West Bengal, wheat in Rajasthan and paddy in Andhra Pradesh are at present being investigated.

The programme for the construction of godowns at mandi centres and rural godowns is closely linked with the programme for marketing. In the course of the Second Plan, about 1670 godowns have been set up; about 980 additional godowns are expected to be established during the Third Plan. At the end of the Second Plan, about 4100 rural godowns had been set up. Their number is expected to rise by about 9200 during the Third Plan.

#### COOPERATIVE PROCESSING

20. Development of cooperative processing is essential not only for increasing rural incomes and facilitating credit for production but also for building up a cooperative rural economy. Where cooperative processing units have been successfully established, they have proved invaluable as instruments of development in several allied fields. Cooperative processing is, however, a recent development. Comparatively greater progress has been achieved in sugar and cotton ginning and pressing than in

other processing industries. By 1960-61, 30 cooperative sugar factories out of a total of 41 were in production. In the course of the Third Plan, depending upon factors governing the progress of the sugar industry as a whole, about 25 cooperative sugar factories may be established. The Industrial Finance Corporation has greatly contributed to the development of the cooperative sugar industry. In the Third Plan, besides continuing to assist cooperative sugar factories, the Corporation should be able to extend its support to the development of cooperative processing in other fields. An important recent development is the setting up of the National Federation of Cooperative Sugar Factories with the object of improving operational efficiency of existing factories and promoting new units.

In the course of the Second Plan, 378 cooperative processing units other than sugar factories were assisted. These included 84 cotton ginning and pressing units, 109 rice mills and hullers, 20 oil mills, 17 jute baling plants, 26 groundnut decorticators and 122 other units. Programmes drawn up for the Third Plan include the setting up of 783 cooperative processing units. These comprise 48 cotton ginning and pressing plants, 36 rice mills, 29 jute baling plants, 33 oil mills, 63 groundnut decorticators, 77 fruit-canning units, 411 rice hullers and 86 other units.

21. The rapid development of the cooperative sugar industry in recent years suggests a twofold approach to the organisation of cooperative processing units in other fields. In the first place, it would now be desirable to formulate overall programmes regarding the number of new units in each branch of industry which are required in consequence of increase anticipated in the production of agricultural raw materials and in the consumption of the final product. Within this plan, the share of expansion to be assigned to the cooperative sector should be determined on broad considerations. To facilitate the working out of specific proposals, designs of plants, estimates of investment and working costs and other technical data should be made readily available. At the same time, as in the case of cooperative sugar factories, arrangements for financing other types of processing units should be indicated, the contribution expected from growers, State Governments, State Financial Corporations and other institutions being stated specifically in advance. Arrangements on these lines should be evolved in the near future by the Central and State Governments in consultation with the National Cooperative Development and Warehousing Board. Against this background, as an aspect of local planning and with a view to strengthening the rural economic structure in each district in its cooperative aspects, concrete proposals should be invited. Given the necessary conditions, there is vast scope for the development of cooperative processing not only in relation to new units but also, progressively, by way of reorganisation on cooperative lines of units which are, at present, privately owned. This latter aspect is important on wider considerations, both because it is the aim of public

policy to reorient the organisation of processing industries from a private to a cooperative basis, and because in many of these industries there is at present either excess capacity or only limited scope for adding to existing capacity. It is essential that proposals for expanding processing industries should be coordinated with programmes for the related village industries. In the organisation of large cooperative undertakings, for processing and other purposes, attention should also be given to the position of workers and employees. They should have the opportunity to participate in the management of the cooperative enterprises in which they serve.

#### COOPERATIVE FARMING

22. The role of cooperative farming in the reconstruction of the rural economy was stressed both in the First and in the Second Plan. The goal indicated in the Second Plan was that such essential steps were to be taken as would provide sound foundations for the development of cooperative farming, so that over a period of ten years or so, a substantial proportion of the agricultural lands were cultivated on cooperative lines. With the growth of population and the need to secure rapid increase in agricultural production and rural employment, it is essential to intensify efforts to develop cooperative farming throughout the country and to realise as speedily as possible the objective set in the Second Plan. In the main, cooperative farming has to grow out of the success of the general agricultural effort through the community development movement, the progress of cooperation in credit, marketing, distribution and processing, the growth of rural industry, and the fulfilment of the objectives of land reform. The contribution of cooperative farming to rural progress will be significant in the measure in which it develops as a voluntary mass movement under genuine local leadership and as a logical growth of community development and cooperation at the village level. Given the approach of community development and the acceptance by the village community of its responsibility for the welfare of all its members, the main problems of cooperative farming are organisational, technical and educational. The problems of internal management with which many cooperative farming societies are faced need to be studied systematically and practical solutions appropriate to different regions found for them.

23. These problems were reviewed in general terms by the Working Group on Cooperative Farming which surveyed a number of existing cooperative farming societies and, in addition to recommendations regarding organisation and patterns of assistance, suggested a scheme of pilot projects which is intended to lead the way towards a more rapid expansion of cooperative farming. Proposals formulated with reference to the recommendations of the Working Group were considered by the National Development Council in September, 1960. The Council decided upon the broad principles guiding the organisation of cooperative farming societies and the assistance to be given to them.

For implementing the programme of cooperative farming, the Ministry of Community Development and Cooperation have constituted a National Cooperative Farming Advisory Board. Similar Boards have been set up in some of the States. The Working Group on Cooperative Farming had suggested 3200 cooperative farming societies being set up as pilot projects, roughly 10 in each district, and these constitute the first phase in the development programme for cooperative farming. For carrying out the programme during the first year of the Third Plan, 65 pilot districts have been recently selected. An extensive programme for orienting official and non-official workers is being carried out. Besides the pilot projects, State Governments will continue to assist cooperative farming societies which are formed on a voluntary basis.

24. In the general pattern of organisation which has been proposed for the development of cooperative farming, stress is laid on the principle that cooperative farming is a voluntary movement and there should be no question of compelling any cultivator to join a cooperative farming society. Membership in cooperative farming societies should be confined to those who are prepared to work on the farm or in ancillary activities and, ordinarily, absentee landholders should not be admitted as members. Persons who are prevented from participation in farm work on account of physical disability, Government service, age, sex or because they have land in more than one village may be admitted, although they may not be participating in farm work but, taken as a group, such persons should not exceed one-fourth of the total membership.

The question of the size of cooperative farms has to be considered from two aspects, firstly, from the point of view of securing an area which will make for economic operation and, secondly, from the point of view of how best cooperative farming should be developed so as to secure the development of the village economy as a whole on the lines visualised in the Five Year Plans. While no maximum size for a cooperative farm is proposed, for the purpose of special assistance from the Government, States may prescribe suitable minima in terms of membership and area.

Members joining a cooperative farming society are expected to pool their lands for a minimum period of five years, withdrawals during this period being permitted in exceptional circumstances. Cooperative farming societies are expected to give a reasonable return on account of land contributed by members in addition to income in lieu of work done by them. While consolidation of holdings is not a condition precedent to cooperative farming, it has been suggested, that advantage should be taken of consolidation proceedings to encourage cooperative farming. Owners of small holdings should be specially assisted to come into cooperative farming societies.

25. In the pilot projects as well as in other cooperative farming societies which may be selected for assistance, provision is made for medium

and long-term loans to the extent of Rs. 4000 and loan and grant for a godown-cum-cattle shed, upto Rs. 5000 and also a management grant of Rs. 1200 spread over a period of 3 to 5 years. In the pilot projects provision is made for State participation in share capital, specially in cooperative farming societies which are composed predominantly of landless labourers and marginal and sub-marginal farmers. Such participation is subject to a ceiling of Rs. 2000 which should, as a rule, be matched by an equal contribution on the part of members and is intended to be retired over a period of 10 years. Besides, a measure of preference is to be accorded to cooperative farming societies in making financial assistance available both from provisions in community development blocks and from those relating to agricultural programmes. In addition to the provision of about Rs. 6 crores for pilot projects in cooperative farming in the plans of States, an allotment of Rs. 6 crores has been set apart at the Centre for assisting the development of other cooperative farming societies. With greater progress in the development of cooperative farming there should be no difficulty in making available such additional resources as are required for supporting the effort. As the Plan proceeds, in the light of practical experience in the pilot areas and elsewhere, it is hoped to formulate more comprehensive programmes for promoting cooperative farming.

#### CONSUMER COOPERATIVES

26. A large number of consumer stores came into existence for the distribution of controlled commodities during and after the second world war. In 1951-52 there were 9757 primary stores with a membership of 1.85 million and a total business exceeding Rs. 82 crores. However, in later years many of these stores were wound up. In 1959-60, there were 7168 primary stores with a membership of about 1.4 million and a total paid up capital of Rs. 2.4 crores. Of these stores less than a third were running at profit. Programmes for the Third Plan provide tentatively for assisting 50 wholesale stores and 2200 primary consumer stores. These targets will, however, need further consideration in the light of the recent report of the Committee on Consumer Cooperatives set up by the National Cooperative Development and Warehousing Board. The Committee suggests in each State an apex wholesale store linked with primary stores mainly in the urban areas and considers that at this stage for areas smaller than a State there may not generally be sufficient business to justify a wholesale store. The Committee has also suggested participation by the State in the share capital of the apex wholesale store and the primary stores. There is both urgent need and considerable scope for the development of a successful consumer cooperative movement, specially in the urban areas, but so far the movement has lagged behind. For rural areas, the distribution of essential consumer goods would fall legitimately within the functions of the service cooperative, arrangements for supply of goods being made ordinarily through the

marketing societies. In the rural areas, the supply of manufactured consumer goods of standard variety which are in common demand could well be a subsidiary function of primary marketing societies or such other agencies as may already exist. Conditions for the development of consumer cooperatives in the Third Plan are generally favourable and, if special efforts are made, rapid progress can be achieved. They will be of the greatest help not only in the stabilisation of retail prices but also in preventing the evils of adulteration in foodstuffs.

#### INDUSTRIAL COOPERATIVES

27. Industrial cooperatives have had a large measure of success in the handloom industry, in coir and in certain village industries. However, their expansion as a general movement has been impeded on account of various practical difficulties. Following the Resolution of the Government of India on Industrial Cooperatives in November, 1959, a series of decisions have been taken which, given the necessary climate and leadership, should facilitate the development of industrial cooperatives during the Third Plan. Industrial cooperative societies are at present following three broad patterns. In some, the members undertake production on their own account and cooperate for certain services such as supply of raw materials, etc. In others they jointly undertake production, marketing and other related activities. In the third group are societies whose members may work separately, but set up cooperative workshops for specific services. In industries like handloom and village industries, as also in several small scale industries, there is great scope for bringing the workers together into a cooperative. Over a large area in the field of small scale industries, however, there is likely to be greater opportunity for organising cooperatives for such objects as providing common facilities, initial processing of raw materials, specialised processing, joint handling of orders, and marketing.

28. Although the plans of States provide for several schemes for encouraging industrial cooperatives, assisting artisans, etc., efforts in these directions need to be intensified further during the Third Plan. At the present stage of development, the important consideration is that effective use should be made of the available concessions and facilities for the formation of industrial cooperatives which have now been evolved so as to strengthen the existing cooperatives and to encourage the organisation of new ones on sound lines, and to concentrate on the solution of practical problems of finance and marketing. Among decisions which have been taken with the object of stimulating the growth of industrial cooperatives as a normal pattern of organisation, special reference may be made to the following:

- (1) loans for working capital at a concessional rate of interest from Government and central cooperative agencies;

- (2) loans to members of industrial cooperative societies for subscribing to share capital;
- (3) grants for managerial staff, improved tools and equipment;
- (4) subsidising for a limited period specified managerial and supervisory staffs of cooperative banks;
- (5) sharing of expenditure with State Governments on additional staff appointed to look after the development of industrial cooperatives; and
- (6) guarantee of advances sanctioned by cooperative financing agencies to industrial cooperative societies for a limited period.

On present indications the number of industrial cooperatives in the Third Plan may increase from about 30,000 to about 40,000, their membership rising from over 2 million to about 3 million and their share capital from about Rs. 10 crores to about Rs. 20 crores. It is desirable that in the light of recent decisions, the Central and State Governments should take steps to prepare further and more specific proposals for the development of industrial cooperatives and should ensure that they receive the necessary support from Government agencies, the All-India Boards and various financial institutions in spreading their activities.

#### LABOUR AND CONSTRUCTION COOPERATIVES

29. The importance of organising labour cooperatives for carrying out irrigation and other projects in rural areas has been stressed frequently since the First Plan. In several States, notably in Punjab, Bombay, Andhra Pradesh and Rajasthan, efforts have been made to set up labour cooperatives, labour contract societies, etc. for taking up works involving mainly unskilled and semi-skilled labour with a view gradually to diminishing the role of contractors. In works programmes for the utilisation of rural manpower to be undertaken in the Third Plan also, labour cooperatives will be required to play a major part. While the policy of entrusting construction works to the extent possible to cooperatives and; where they exist, to voluntary organisations has been accepted, the administrative measures required to give effect to it need to be evolved in greater detail.

30. Labour and construction cooperatives and voluntary organisations can be entrusted with advantage with works under the following categories:

- (1) earth-work of all types and simple masonry works relating to multipurpose, major and medium irrigation works and flood protection schemes, minor irrigation works and construction of roads;
- (2) simple Government buildings such as hostels, administrative blocks, workshops, residential tenements, school buildings and other local development works in rural areas; and



- (3) supply in bulk quantities of building materials such as stones, stone blasts, shingle and sand.

To enable genuine labour cooperatives and voluntary organisations to undertake these works, certain administrative conditions have to be fulfilled, the more essential of these being the following:

- (1) setting apart a certain proportion of the available construction work for cooperatives and voluntary organisations, the quantum being extended as the capacity of these organisations develops;
- (2) ensuring continuous flow of work, the magnitude, types and the specific works to be awarded being indicated well in advance;
- (3) giving works to cooperatives and voluntary organisations in preference to private contractors and, wherever possible, on a negotiated basis;
- (4) award of works at "workable rates" on the basis of schedules of rates, which may be increased or decreased by a percentage to be decided by the competent authority, the work order system being preferred wherever possible;
- (5) avoidance of delays in payments and authorisation of "on account payments" for works completed;
- (6) making technical personnel available for work with cooperatives and voluntary organisations; and
- (7) assistance by way of loans for working capital and purchase of equipment.

In the light of the experience which different States have already gained of the working of labour cooperatives, suitable organisational patterns should be evolved.

The aim should be to build up labour cooperative organisations and voluntary organisations as important instruments for undertaking development and providing employment through works carried out mainly on behalf of Government Departments, Panchayat Samitis and Panchayats. Once such organisations come into existence, new possibilities for enlarging their scope and extending their benefits to the community in many directions will emerge.

#### HOUSING COOPERATIVES

31. In 1959-60 there were 5564 cooperative housing societies with a total membership of 322,000. Housing cooperatives constructed 45,000 houses in 1959-60 as compared to 44,000 in 1958-59 and 36,000 in 1957-58. Under different housing schemes which are at present being undertaken, facilities are provided for the setting up of housing cooperatives. For

instance, the subsidised industrial housing scheme allows for a subsidy up to 25 per cent of the cost in the case of cooperatives of industrial workers. Under the low income group housing scheme as well as other schemes which are being undertaken in a number of growing towns, cooperatives are either allotted land on favourable terms or assisted in acquisition of private lands. The village housing scheme also provides for the setting up of housing cooperatives in selected villages and for the production of bricks, doors, windows and other components. These various provisions need to be used purposefully and as a matter of sustained policy so that, in towns and villages alike, an appreciable impact can be made on the improvement of housing and living conditions. The proposal in the Third Plan to set up a Central Housing Board and to promote the establishment of Housing Boards in the States will make it possible to channel larger funds to housing cooperatives. With the preparation of interim general plans and master plans for a large number of towns and of lay-out plans for selected villages as visualised in the Chapter on Housing, it will become easier to implement effectively the policy of supporting and developing housing cooperatives on a large scale during the Third Plan.

#### OTHER NON-CREDIT COOPERATIVES

32. In addition to the various types of cooperatives discussed above, reference may be made to cooperatives engaged in the supply of sugarcane and milk and in the development of fisheries and dairying and to cooperative cold storages. Sugarcane supply societies account for a total membership of 2·34 million, milk supply societies for 253,000 and fisheries societies for 220,000. By the end of Second Plan 16 cold storages were established; 33 more will be set up in the Third Plan. The Third Plan includes large programmes for fisheries development and dairying. These are fields of great promise for the development of cooperative activity. Transport cooperatives should also be encouraged as a means of providing new opportunities for educated unemployed persons. The principle of cooperation can be extended to a growing range of new activities in industry and services, such as, manufacture of implements, printing, supplies of raw materials, provision of common facilities, etc. In the tribal development blocks and in areas predominantly inhabited by scheduled tribes, there is considerable scope for building up cooperatives, specially for working forest areas and developing the traditional crafts. The Central Government have recently set up a committee to consider the lines along which procedures and legislation relating to cooperation should be adapted to meet the special conditions and requirements of tribal areas.

#### COOPERATIVE TRAINING AND ADMINISTRATION

33. The role of trained personnel in the efficient execution of cooperative programmes was emphasised in the Rural Credit Survey, and in

recent years there has been considerable development of training facilities for cooperative personnel. At the end of the Second Plan, besides the Cooperative Training College at Poona for training senior staffs of Cooperative Departments, there were 13 regional centres for intermediate and block level cooperative officers and 62 cooperative training centres for junior personnel. Special courses for land mortgage banking and marketing have also been organised at the intermediate training centres. By the end of the Second Plan, the numbers trained included 543 senior personnel, 3417 block level and intermediate officers, 34,000 junior personnel and 382 in courses for land mortgage banking and 1253 for cooperative marketing. The All-India Cooperative Union and State Cooperative Unions have organised 368 peripatetic parties for the training of office-bearers, members of managing committees and members of primary cooperatives. In these categories, about 28,500, 12,000 and 726,000 persons respectively were trained by the end of the Second Plan.

34. For the Third Plan, the programmes drawn up by the States envisage, amongst other steps, the addition of 13 schools for training junior cooperative personnel and the continuance of the scheme for the education of members of cooperative societies through peripatetic parties. The Study Team on Cooperative Training, constituted by the Ministry of Community Development and Cooperation, which has recently submitted its proposals, contemplates increase in the number of centres for training intermediate personnel to 15 and in the number of centres for junior cooperative personnel to 120. These and other recommendations of the Team are at present under consideration.

35. Steps have been taken during the Second Plan to strengthen the State Cooperative Departments, in particular, for such functions as audit, supervision and inspection. In the Third Plan a further provision of about Rs. 5 crores has been made for strengthening the personnel of Cooperative Departments at different levels.

36. In planning and carrying out intensive development in rural areas, Panchayati Raj institutions and cooperative organisations have a complementary role and must cooperate closely at every step. Zila Parishads, Panchayat Samitis and Village Panchayats should promote the development of cooperatives and should endeavour to create a climate of community effort and social responsibility such as are vital for the successful functioning of cooperatives at all levels. Regulatory powers in relation to cooperative organisations may continue to remain with the Government, but some of them can be delegated progressively to federal cooperative organisations. These will help to build up the self-regulatory character of the movement and to promote local leadership.

37. Cooperation is a people's movement and initiative for cooperative development and responsibility for regulating the working of the movement should progressively devolve on cooperative institutions and their

higher federal organisations. The building up of efficient federal organisations in all sectors of cooperative activity assumes great importance in this context. As these organisations grow in strength, more powers may be transferred to them and the departmental machinery may limit its activities to the minimum statutory duties of registration, audit, arbitration and inspection. Promotional work relating to cooperation, cooperative training, education and publicity are activities falling within the special province of cooperative unions. Cooperative unions at State and district levels should be strengthened to enable them to undertake these responsibilities, and a strong federal structure should be built from the ground.

**ANNEXURE**  
**Statement I—Primary agricultural credit societies**

State	total number of societies on June 30, 1960	3	4	5	6	7	8	9	10	11	12
		proportion of societies working at outstandings on a loss (June 30, 1960)	proportion of societies revitalisation of societies Second Third Plan (advanced) (estimated) (programme)	short and medium term loans (Rs. in lakhs)	1959-60 1960-61 1965-66 1965-66 (estimated)	1959-60 1960-61 1965-66 1965-66 (estimated)	1959-60 1960-61 1965-66 1965-66 (estimated)	1959-60 1960-61 1965-66 1965-66 (estimated)	1959-60 1960-61 1965-66 1965-66 (estimated)	1959-60 1960-61 1965-66 1965-66 (estimated)	1959-60 1960-61 1965-66 1965-66 (estimated)
I	2	3	4	5	6	7	8	9	10	11	12
Andhra Pradesh	12527	27	14	4000	4000	1750	2000	6000	1262	1500	4000
Assam	3070	34	55	2500	..	137	250	800	159	250	800
Bihar	16222	37	55	1580	8000	129	180	1150	706	1000	2000
Gujarat	7053	33	25	5600	1000	2126	2700	5000	750	900	1500
Maharashtra	17816	21	27	3000	3000	2937	3700	10000	1531	1800	4000
Jammu and Kashmir	1294	9	26	425	..	65	100	500	233	300	600
Kerala	2289	34	20	600	1000	409	500	1600	756	850	1500
Madhya Pradesh	20629	16	21	3500	6000	1301	1500	4000	789	900	2000
Madras	9589	24	11	1000	2000	1737	2000	4700	1584	2000	3900
Mysore	8017	25	33	3780	2000	1203	1500	3750	1054	1200	2100
Orissa	6520	35	20	472	2000	235	275	1800	369	500	1800
Punjab	17107	18	26	2750	2500	1129	1300	3000	1126	1340	2100
Rajasthan	9281	13	19	3000	1000	539	650	1800	573	700	2000
Uttar Pradesh	57136	10	6	9500	15000	2922	3400	7000	2883	3300	6500
West Bengal	13076	27	43	2700	4500	227	300	1500	571	700	2000
Union territories	1546	19	18	645	180	64	100	317	137	250	429
total	203172	21	21	42052	52180	16910	20455	52917	14483	17490	37229

## ANNEXURE

Statement II—Long-term credit

State	number of banks as on June 30, 1960		long-term loans outstanding (Rs. crores)		
	central land mortgage banks	primary land mortgage banks	1959-60	1960-61 (estimated)	1965-66 (programme)
I	2	3	4	5	6
Andhra Pradesh	2	93	5.89	6.90	23.31
Assam	1	3	0.14	0.17	1.60
Bihar	1	..	0.02	0.10	3.50
Gujarat	1	5	8.30	9.00	20.00
Maharashtra	1	27	3.55	5.00	50.00
Jammu & Kashmir	..	..	..	..	..
Kerala	1	7	1.43	1.50	3.00
Madhya Pradesh	1	20	0.34	0.50	5.00
Madras	1	85	5.16	6.00	14.48
Mysore	1	108	3.12	3.80	10.00
Orissa	1	..	0.57	0.60	2.00
Punjab	1	..	0.37	0.60	2.90
Rajasthan	2	41	0.02	0.15	8.05
Uttar Pradesh	1	6	0.01	0.08	5.00
West Bengal	1	12	0.24	0.25	1.50
Union Territories	1	..	0.01	0.01	0.20
total	17*	407	29.17	34.66	150.54

\*Including land mortgage banking department of apex cooperative bank in Madhya Pradesh.

## CHAPTER XIV

### LAND REFORM

#### OBJECTIVES FOR THE THIRD PLAN

LAND reform programmes, which were given a place of special significance both in the First and in the Second Plan, have two specific objects. The first is to remove such impediments to increase in agricultural production as arise from the agrarian structure inherited from the past. This should help to create conditions for evolving as speedily as possible an agricultural economy with high levels of efficiency and productivity. The second object, which is closely related to the first, is to eliminate all elements of exploitation and social injustice within the agrarian system, to provide security for the tiller of soil and assure equality of status and opportunity to all sections of the rural population.

2. The principal measures for securing these objectives were the abolition of intermediary or 'rent-receiving' tenures and the reform of tenancy, including regulation and reduction of rent and security of tenure. A further step to which tenancy reform led was the conferment of right of ownership on tenants.

3. In pursuance of the second object, in particular, it was proposed that steps should be taken to reduce disparities in the ownership of land—a policy widely accepted as being essential for the economic development of countries with limited areas of land and large population dependent on it. It was realised that with the existing pattern of distribution of agricultural holdings and the predominance of small farms, redistribution of land in excess of any given level of ceiling was not likely to make available any large results in the shape of surplus land for distribution. It was considered, however, that such reduction in disparities was a necessary condition for building up a progressive cooperative rural economy. At the same time, such redistribution of land as might be possible would, along with other measures which have been taken for resettlement on waste lands, afford a measure of opportunity to the landless section of the population, to whose problems special attention was drawn both in the First and in the Second Plan. It should be stressed that the principles on which the scheme of land reform is based do not merely involve adjustments between the interests of different sections of the population which depend on land, but are part of a wider social and economic outlook which has to be applied in some measure to every part of the economy.

4. It will be seen that, with the implementation of a programme of land reform on the lines described above, the vast majority of cultivators in India would consist of peasant-proprietors. They are to be encouraged and assisted in organising themselves in voluntary co-operative bodies for credit, marketing, processing and distribution and, with their consent, progressively also for production. To the extent such reorganisation is carried out at the village level, some of the difficulties arising from small and uneconomic holdings could be diminished and the weaker in each community could be assisted to raise their standards. It has always been stressed that as each phase of land reform is implemented, it will become possible to give fuller assistance to cultivators in increasing agricultural production and in diversifying the village economy. Greater cohesion among cultivators and the strengthening of the village community will also lead to a larger local effort and more rapid economic and social progress.

5. As legislation has been enacted in one State after another, there has been greater understanding of the need for land reform and the purposes it is intended to achieve. The Bhoodan and Gramdan movements have greatly helped to create a favourable atmosphere for implementing progressive measures of land reform. Yet, the total impact of land reform has been less than had been hoped for. For this there are several reasons. In the first place, there has been too little recognition of land reform as a positive programme of development, and it has been only too often regarded as extraneous to the scheme of community development and the effort to increase agricultural production. Secondly, there has been insufficient attention to the administrative aspects of land reform. Frequently at the lower levels of the administration, collusion and evasion have gone unchecked, and there has been failure also to enlist the support and sanction of the village community in favour of effective enforcement of legal provisions. In the third place, it has not been sufficiently realised that the reform of land tenures and the early enforcement of ceilings are an essential foundation for the building up of the cooperative rural economy. While removing such shortcomings in the legislation or the rules as may come to notice, it is important that the land reform programme should be completed with the least delay, so as to eliminate any feeling of uncertainty arising from delays in implementation. This aspect has been specially stressed by the Panel on Land Reform constituted by the Planning Commission to assist in the study of proposals for the Third Plan.

#### ABOLITION OF INTERMEDIARY TENURES

6. Work on the abolition of intermediary tenures like zamindaris, jagirs and inams, which covered more than 40% of the area of the country, has been fully carried out except for a few minor tenures such as those held by religious and charitable institutions and service inams. These reforms have brought more than 20 millions of tenants into direct relationship



with the State and improved their social and economic position. As a result of the abolition of intermediary tenures, considerable areas of cultivable waste land and private forests came under the management of Government.

7. Several States with intermediary tenures did not possess the requisite revenue administration. Over the past few years, they have done much to strengthen their revenue agencies but there is need for further improvement, especially at the village level. There has been progress also in survey and settlement and in the preparation of records of rights, but much still remains to be done. Largely on account of the heavy burden thrown on the revenue administration, there has been a measure of delay in the assessment and payment of compensation to intermediaries. Out of a total amount of Rs. 670 crores (Rs. 520 crores as compensation and Rs. 150 crores for interest charges), so far compensation to the extent of only Rs. 164 crores has been paid, mainly in the form of bonds. It is important that in the course of the Third Five Year Plan, all the States concerned should arrange to issue the compensatory bonds still outstanding and complete records of rights and other administrative tasks arising from the abolition of intermediaries.

#### REDUCTION OF RENTS

8. Ten years ago the customary level of rents commonly paid by tenants-at-will, non-occupancy tenants and share-croppers over the greater part of the country was one-half of the produce or more. In addition to rent, very frequently there were other payments which enhanced the burdens borne by tenants. The situation was reviewed at length in the First Five Year Plan which suggested that a rate of rent exceeding one-fourth or one-fifth of the produce would call for special justification. Over the past few years, all States have enacted legislation for regulating rents which a landlord may receive. In some States, as in Gujarat, Maharashtra and Rajasthan, the maximum rent now stands at one-sixth of the produce. In Assam, Kerala, Orissa and Union Territories, the rent payable is about one-fourth of the produce or less. In several States, the normal level of rent is still about a third of the produce. It is to be hoped that in these States rents will be reduced to the level envisaged in the first two plans so as to facilitate more rapid improvement in the economic conditions of tenants.

9. In the early years of tenancy legislation, it was observed that reduced levels of rents—and indeed other conditions of tenancy—provided for by legislation were far from adequately enforced, and to a large extent customary rates of rent continued to prevail. Where arrangements for leasing land are arrived at between individual parties, variations from the norms set by legislation can occur for a variety of reasons, for instance, if the owner undertakes to provide seed or bullocks or pay for irrigation. In the beginning, there is also considerable ignorance on the part of

tenants of the rights granted by legislation. Where there is pressure on land and the social and economic position of tenants in the village is weak, it becomes difficult for them to seek the protection of law. Moreover, resort to legal processes is costly and generally beyond the means of tenants. Thus, in many ways, despite the legislation, the scales are weighed in favour of the continuance of existing terms and conditions. Effective implementation of tenancy legislation, therefore, requires specially vigorous and sustained action on the part of governmental agencies. There must be special efforts not only to acquaint tenants with the rights due to them but also to bring about greater understanding on the part of the people of each area of the objects of land reforms and of the need to complete them without delay.

10. Although, in the past, rents have generally been paid as a proportion of the gross produce, with progress in the rural economy and larger use of money as the medium of exchange, it would be desirable, as a matter of policy, to hasten the transition from rents in kind to cash payments. With cultivators having to purchase a growing proportion of their requirements, such as fertilisers, implements etc., in cash, the change-over to cash rents is likely not only to reduce the burden on tenants, but also to promote investment in agriculture. As suggested in the Second Plan, commutation of rents in kind into cash payments might be facilitated if, with due regard to conditions of each district, rents could be declared as multiples of the prevailing land revenue assessment. Where this is not feasible, suitable norms could be proposed on the basis of other criteria. It would greatly assist the enforcement of rents prescribed by legislation if State Governments could make it obligatory on the part of owners to furnish receipts for the rents received by them and if, as is already the practice in some States, tenants could deposit the rents due from them with the appropriate revenue officer, the land owner being advised accordingly.

#### SECURITY OF TENURE

11. Legislation providing for security of tenure has been enacted in eleven States and for all the Union Territories. In four States Bills are before the legislature and will be enacted in the near future. Pending legislation, ejectment of tenants has been stayed. Legislation for security of tenure has three essential aims—firstly, that ejectments do not take place except in accordance with the provisions of the law; secondly, that land may be resumed by an owner, if at all, for 'personal cultivation' only; and thirdly, that in the event of resumption the tenant is assured of a prescribed minimum area.

12. In the first phase of tenancy legislation it was perhaps inevitable that the provisions regulating the rights of owners and tenants should be somewhat elaborate. Such complexity comes in the way of making

the legislation effective. In the light of the experience gained, it suggested that steps should be taken to simplify the existing legislation wherever possible, and to strengthen or modify provisions which are in practice difficult to enforce.

13. As stated earlier, the impact of tenancy legislation on the welfare of tenants has been in practice less than was hoped for. One of the principal reasons for this is that in a number of States ejectments of tenants have taken place on a considerable scale under the plea of 'voluntary surrenders'. Two main recommendations on this subject were made in the Second Plan. The first was that voluntary surrenders by tenants of lands held by them should not be regarded as valid unless they were duly registered by the revenue authorities. Secondly, in the event of surrender of tenancy, the land owner should be entitled to take possession of land only to the extent of his right of resumption permitted by law. On the whole, both legislation and administrative action have fallen short of these recommendations. A few States have provided for registration of surrender of land by tenants. Registration of surrenders is essential and a provision on these lines should be a feature of tenancy legislation. The second lacuna in the existing legislation concerns the conditions applicable to surrenders. In two States effect has been given to the recommendation in the Second Plan that resumption of land arising from a voluntary surrender by the tenant should take place on conditions identical with those governing resumption for personal cultivation. In Maharashtra and Gujarat, the overall limit for resumption applies also to surrenders, but other conditions governing surrenders are different. As was pointed out in the Second Plan, most voluntary surrenders of tenancy are open to doubt as bonafide transactions. This has been confirmed by such enquiries and investigations as have been undertaken. It is, therefore, important that early steps should be taken to remove legal and administrative deficiencies relating to the registration of 'voluntary surrenders' and resumption of land arising from them.

14. In most States legislation provides for a definition of 'personal cultivation' which is, as a rule, a necessary condition for resuming land from tenants. There are three elements in 'personal cultivation', namely, risk of cultivation, labour and personal supervision. The obligation of the owner to bear the entire risk of cultivation implies that wages will be paid in cash or in kind, but not as a share of the crop. While the expression 'labour' is generally defined to include 'labour by the owner or by a member of his family', this is not an obligatory element in 'personal cultivation'. In the Second Plan, the proposal was made that where land is resumed on grounds of 'personal cultivation', it would be desirable to provide for personal labour as a necessary ingredient, in the absence of which the ejected tenant should have the

right of restoration. So far this suggestion has not found its way into the legislation undertaken by the States. A provision on these lines is desirable and would serve to make the legislation more effective. As an essential element in 'supervision', the Second Plan envisaged residence during the greater part of the agricultural season by an owner or a member of his family in the village where the land is situated or in a near-by village within a distance to be prescribed. The Panel on Land Reform has suggested that the condition of residence in these terms should apply during the period the main agricultural operations are undertaken. This suggestion should be considered by State Governments and the current definitions of 'personal supervision' modified to the extent necessary.

#### RESUMPTION OF TENANCIES

15. The main recommendations in the Second Plan for regulating resumption of tenancies on grounds of personal cultivation were as follows:

- (1) The area to be resumed should be declared within a certain period and should be demarcated in advance.
- (2) Owners with very small holdings, for instance, those having one-third of a family holding or less should be free to resume their entire land for personal cultivation. Those with holdings above this level might resume land for personal cultivation subject to a minimum area being left with the tenant.
- (3) Right of resumption may be exercised within a period of five years.
- (4) Persons serving in the armed forces or those subject to disabilities, like widows, minors or those suffering from mental or physical infirmities etc., should be permitted to lease out land and should have the right to resume land for personal cultivation when the disability ceases.

16. From the tenor of legislation enacted or under consideration, States fall broadly into four categories:

- (a) those in which no resumption is permitted, as in Uttar Pradesh, Delhi and, in respect of under-raiyats, West Bengal;
- (b) those in which the right to resume a limited area for personal cultivation is allowed subject to the condition that a minimum area or a portion of the holding is left with the tenant, as in Bihar, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Mysore, Orissa, Rajasthan, Himachal Pradesh and Manipur;

- (c) those in which the right to resume is subject to the tenant being given alternative land upto a prescribed limit for cultivation, the land being found by the State, as in Punjab and Assam; and
- (d) those in which resumption is allowed up to the level of the ceiling without any minimum area being provided for the tenant, as in Andhra Pradesh and Madras. Bargadars in West Bengal who are crop-sharers, are not regarded as tenants. They do not have the rights extended to under-raiyats, although strictly speaking they fall within the definition of 'tenant'.

17. Experience of the working of legislation relating to resumption on grounds of personal cultivation leads to certain broad conclusions. In the first place, whatever the conditions, the right to resume land creates uncertainty and tends to diminish the protection afforded by the legislation. Both in the First and in the Second Plan, it was contemplated that it would not be necessary to allow resumption beyond a period of five years. It is considered that except for owners holding land equivalent to a family holding or less, in view of the period which has already elapsed, there should be no further right of resumption. Further uncertainty for tenants would not be in the interest of agricultural development. In the second place, small owners, that is, owners with a family holding or less, deserve special consideration. As suggested in the Second Plan, owners with less than a basic holding (that is, one-third of a family holding) should be free to resume their entire area for personal cultivation and to lease out their lands. As regards owners whose holdings lie between a basic holding and a family holding, they may be permitted to resume for personal cultivation, within a specified period, one-half of the area held by the tenant but in no event less than a basic holding. Where a tenant is left without any land or with area smaller than a basic holding the Government should endeavour to find land for him to cultivate. The general aim should be to encourage small owners, and specially those among them with very small holdings, to enter into cooperative farming societies. Membership in a cooperative farming society would enable them to move to other work if they so desire. For such owners it would not be necessary to prescribe a period beyond which resumption for personal cultivation should not be permitted.

18. Provisions regarding resumption for personal cultivation could be abused if medium-sized owners were to act malafide and transfer their lands to relatives or others and so come within the definition of small owners. With a view to ensuring that the provisions for resumption are observed, legislation in Gujarat and Maharashtra was amended

in 1957 so as to restrict resumption in respect of such land as stood in the name of a land holder or any of his ancestors in the record of rights on the 1st day of January, 1952. In the legislation in Kerala which includes special provision for small holders, it has been provided that any transfers or partitions carried out after the 18th day of December, 1957, shall not entitle the land holder or the transferee to the benefit of the provisions for small holders. A condition on these lines would be generally desirable.

#### RIGHTS OF OWNERSHIP FOR TENANTS

19. Security of tenure and reduction of rents are the first stage in tenancy reform; the goal is to confer rights of ownership on as large a body of tenants as possible. In the Second Plan it was suggested that each State should have a programme for converting tenants of non-resumable areas into owners and putting an end to vestiges of the landlord-tenant relationship. It was urged that instead of optional rights to tenants to purchase lands cultivated by them, all tenants of non-resumable areas should be brought into direct relationship with the State. For owners with holdings equivalent to a family holding or more, a period of five years within which the right of resumption could be exercised was proposed, and it was suggested that on the completion of this period, rights of ownership should be conferred on their tenants. Finally, as it was difficult to obtain precise information regarding the progress made in the transfer of ownership rights to tenants, the recommendation was made that States should arrange to compile regular annual returns.

20. In the course of the Second Plan, some progress has been made in the direction of providing ownership rights to tenants. In a few States as in Punjab, only optional right to purchase has been given to tenants. This is an unsatisfactory approach, for, as was observed in the Second Plan, where rights of purchase are optional, they are scarcely exercised. In a number of States, legislation provides for bringing tenants of non-resumable lands into direct relationship with the Government. This may be achieved in one of the three ways:

- (1) by declaring tenants as owners and requiring them to pay compensation to owners in suitable instalments, responsibility for recovering unpaid instalments as arrears of land revenue being accepted by Government;
- (2) through the acquisition by Government of the rights of ownership on payment of compensation and transfer of ownership to tenants, compensation being recovered from them in suitable instalments; and

- (3) through the acquisition by Government of the landlords' rights and bringing tenants into a direct relationship with the State, option being given to tenants to continue as such on payment of fair rent to the Government or to acquire full ownership on payment of the prescribed compensation.

21. The first of these courses has been followed in Gujarat, Maharashtra, Madhya Pradesh and Rajasthan, the second in Delhi and in respect of under-raiyats (without payment of compensation) in West Bengal, and the third in Kerala and Uttar Pradesh. In Madras, steps in favour of ownership rights for tenants have not yet been initiated. In Assam and Bihar, the right of ownership will be available only to the tenants of landholders holding more than the ceiling area. As much of the legislation is quite recent, exact information regarding the extent to which ownership rights have been conferred on tenants is not available. It is understood that in Gujarat and Maharashtra, under legislation enacted by the former Bombay State, rights of ownership would accrue to 1.3 million tenants over an area of about 2.4 million acres. In Uttar Pradesh, about 1.5 million sub-tenants and tenants of home-farm lands, holding about 2 million acres, were brought into direct relationship with the State. In the Union Territory of Delhi, ownership of about 25,000 acres was transferred to about 18,000 tenants and sub-tenants.

22. It is recommended that in the course of the Third Plan, steps should be taken to complete the programme for conferring rights of ownership on the tenants of non-resumable lands. With the enforcement of ceilings on agricultural holdings, tenants of owners with lands above the limit of ceiling will, in the ordinary course, become owners of land. It has been suggested earlier that owners holding land exceeding a family holding, as prescribed in different States, should have no further rights of resumption. Tenants of such owners should also become owners of lands held by them. With this object, according to its legislation and other conditions, a State may either acquire the rights of ownership and transfer them to tenants or declare tenants as owners and require them to pay for their rights in instalments on terms prescribed by legislation. On the whole, it would be desirable for payments by tenants for acquisition of ownership to be made directly to Government rather than to the owners. This will ensure more effective implementation and will end the landlord-tenant nexus.

23. The question arises whether rights of ownership should also be conferred upon the tenants of small owners. This would be desirable in principle to the extent of non-resumable lands held by such tenants. However, in view of the large number of petty owners involved, a uniform approach might not be feasible. The problem should be

studied by States in the light of their conditions with a view to determining the action called for in this direction.

#### CEILING ON AGRICULTURAL HOLDINGS

24. In the course of the Second Plan, there has been legislation for placing ceiling on agricultural holdings in Andhra Pradesh, Assam, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Orissa, PEPSU territory in the Punjab, Rajasthan, Uttar Pradesh and West Bengal and in the Union Territories. Bills proposing ceilings are at present before the State legislatures in Bihar, Madras and Mysore. In Punjab, outside the area of the former PEPSU territory, the existing legislation permits the Government to utilise land in excess of the permissible area for the purpose of resettling tenants who have been ejected or may be ejected. Annexure I of this Chapter sets out in summary form information relating to the levels at which ceilings have been prescribed or proposed in different States. With the completion of legislation, the essential task must be that of ensuring speedy and effective implementation.

25. The question whether ceilings should apply to the holding of an individual owner or to the aggregate area held by the members of a family was considered in the Second Plan. As is to be expected, practice in this respect differs. In several States, as in Andhra Pradesh, Jammu and Kashmir, Orissa, Punjab, Uttar Pradesh and West Bengal the ceiling applies to individuals without any special provision being made for joint Hindu families. In Madhya Pradesh, while the ceiling applies to individuals, in the case of a joint Hindu family each co-sharer is entitled to a separate ceiling area. In Assam, Gujarat, Kerala and Rajasthan, the ceiling applies to the aggregate area held by a family, the expression 'family' being defined in the legislation. A similar approach has been adopted in the legislation now under consideration in Madras and Mysore. Thus different States have applied ceilings to individuals or families as they considered appropriate to their conditions.

26. Once legislation has been enacted, amendments should aim primarily at eliminating deficiencies and facilitating implementation rather than at introducing fundamental changes in the principles underlying the legislation. In this context, the most important issue for consideration is the treatment of transfers of land on the part of land owners subject to ceilings. On the whole, it would be correct to say that, in recent years, transfers of lands have tended to defeat the aims of the legislation for ceilings and to reduce its impact on the rural economy. The question as to whether or not transfers should be disregarded and, if so, from what date, has been debated at length in every State. In the majority of States a date prior to the enactment of the



legislation has been indicated. This may be the date of the introduction of the Bill providing for ceilings or of its publication or other specified date. In several States transfers subsequent to this date are disregarded as in Assam, Gujarat, Kerala, Madras, Maharashtra, Rajasthan, Uttar Pradesh and West Bengal. In a few States, there is no such provision at all, as in Andhra Pradesh. In Madhya Pradesh and Orissa, legislation allows the owners of surplus lands to dispose them of to persons belonging to certain prescribed categories even after the enactment of the legislation.

27. Since many of the transfers are apt to take place between members of the family, it has been suggested that the ceiling should apply invariably to the aggregate area held by a family rather than to individuals. However, in view of the fact that ceilings have been applied in several States to individual holdings and in others to the aggregate area held by a family, any attempt to remove deficiencies or weaknesses would have to fit into the pattern of the prevailing legislation. The question of transfers could perhaps be dealt with in the following manner:

- (1) Where legislation does not contain a provision for disregarding transfers, in view of the fact that transfers have taken place on a considerable scale, a suitable date subsequent to which transfers are disregarded may be proposed, if necessary, through an amending legislation. This date may be the date of the publication of the ceiling proposals or an earlier date as may be prescribed in view of the local conditions.
- (2) In respect of transfers made after the specified date, a distinction may be made between (a) transfers among the members of a family, (b) benami transfers and other transfers which have not been made for valuable consideration and through a registered document, and (c) transfers made for valuable consideration through a registered document. Transfers coming under (a) and (b) can be disregarded. Transfers falling under (c) may need to be dealt with differently in view of the fact that the transferees may be small owners or landless persons who may have purchased some land. It may be necessary to protect such transferees, at any rate, upto a prescribed limit, say, a family holding.
- (3) There should be provision for a review of transfers by a competent authority on the lines suggested above.

## EXEMPTIONS FROM CEILINGS

28. The Second Plan envisaged exemption from ceilings for the following categories of farms:

- (1) tea, coffee and rubber plantations;
- (2) orchards where they constitute reasonably compact areas;
- (3) specialised farms engaged in cattle-breeding, dairying, wool-raising, etc.;
- (4) sugarcane farms operated by sugar factories; and
- (5) efficiently managed farms which consist of compact blocks, on which heavy investment or permanent structural improvements have been made and whose break-up is likely to lead to a fall in production.

This recommendation was based on three main considerations. Firstly, in undertakings like plantations, industrial and agricultural work had to be closely integrated. Secondly, in certain specialised branches of agriculture such as horticulture, cattle-breeding, dairying, etc., investment has to be made on a long-term basis and several years elapse before the output could be realised. In the third place, it was thought that in safeguarding efficiently managed farms which consisted of compact blocks on which heavy investment or permanent structures had been made, risk of fall in production would be avoided.

29. In the legislation which has been enacted in the States, plantations have invariably been exempted from ceilings. There are provisions also in favour of specialised farms. There has been some measure of variation in the approach to sugarcane farms operated by sugar factories and to efficiently managed farms. Legislation in several States (Andhra Pradesh, Assam, Gujarat, Madhya Pradesh, Orissa, Punjab and Rajasthan) and proposals under consideration in some others (Bihar and Mysore) provide for the exemption of efficiently managed farms from ceilings. Where the exemption exists, by and large it has still to be implemented. In Kerala, Madras, Maharashtra and Uttar Pradesh, exemption of efficiently managed farms from ceilings has not been envisaged. In Uttar Pradesh, the Government has taken power to operate the surplus lands of mechanised farms as State farms and to appoint suitable persons as managers on terms and conditions to be prescribed, preference being given to the existing holders of these farms if they are otherwise qualified.

30. As regards sugarcane farms operated by sugar factories, legislation in several States exempts them from the operation of ceilings, as in Andhra Pradesh, Assam, Madhya Pradesh, Orissa, Rajasthan and PEPSU

area of Punjab and in the Bills at present under consideration in Bihar and Mysore. In three States, however, a different approach has been adopted. In Madras legislation provides for the setting up of a Sugar Factory Board to review whether individual factories should or should not be exempted from ceilings. Considerations such as the requirements of the sugar factory and its financial structure have to be taken into account before final decisions are taken. In Uttar Pradesh, while there is no exemption from ceilings, provisions relating to mechanised farms mentioned above would also apply to sugarcane farms operated by sugar factories. In Maharashtra, sugarcane farms of sugar factories are not exempted from ceilings but provision is made for maintaining the integrity of the farms in one or more compact blocks, for full and continued supply of raw material to sugar factories at a fair price, and for grant of surplus land to joint farming societies consisting, as far as possible, of persons who had previously leased their lands to the sugar factory, agricultural labourers employed on the farm, technical and other staff engaged by the factory for work on the farm, adjoining land holders who are small holders and landless workers.

31. The considerations urged in the Second Plan and the recommendations regarding the exemption from ceilings of efficiently managed farms and of sugarcane farms operated by sugar factories remain generally valid for the Third Plan and there are advantages in following the course proposed. On the other hand, where a State, because of practical difficulties or other considerations, wishes to adopt a different course, certain conditions should be assured. These are, firstly, that the integrity of the farms should be maintained and their levels of efficiency ensured and, secondly, in the case of sugar factory farms satisfactory and continuous supply of the raw material to the factory concerned should be secured.

#### SCHEMES OF RESETTLEMENT

32. Proposals to set ceilings on agricultural holdings were intended to serve two objects—firstly, to bring about reduction in disparities and pave the way to the development of a progressive cooperative rural economy and, secondly, to provide land for redistribution to the landless sections of the rural population. Far-reaching legislation has been enacted and although precise estimates are difficult to make, it would appear that the total area of surplus lands likely to be available for distribution to the landless might be considerably less than what had been hoped for at one time. At the present stage in land reform the most important consideration is that such lands as can be made available by each State as a result of the implementation of its ceilings legislation should be allotted with least possible delay. Along with these lands, waste lands and, where possible, lands available through Bhoodan should be pooled

and systematic schemes of resettlement speedily implemented. In providing land care should be taken to make available the necessary credit and other facilities, so that those settled on the land may develop high standards of cultivation. It was contemplated in the Second Plan that in the settlement of land acquired in consequence of the application of ceilings, tenants displaced as a result of resumption of land for personal cultivation, farmers with uneconomic holdings and landless workers should receive preference. It was also proposed that settlements should be made, as far as possible, on cooperative lines. Generally, the legislation which has been enacted follows these recommendations. It was also proposed in the Second Plan that farmers with uneconomic holdings should be admitted into cooperatives constituted with surplus lands if they also agreed to pool their lands. In taking action along these lines the necessary financial and technical assistance should be provided as envisaged in the programme for the development of cooperative farming proposed for the Third Plan.

#### CONSOLIDATION OF HOLDINGS

33. Progress in the consolidation of holdings has been recorded in Punjab, Uttar Pradesh, Maharashtra, Gujarat and Madhya Pradesh. In other States, there has been comparatively little advance during the Second Plan. By the end of 1959-60 about 23 million acres had been consolidated and work was in hand over another 13 million acres. According to indications given by States, the total area likely to be taken up for consolidation in the Third Plan is about 30 million acres. With a view to making experience in consolidation of holdings available to all States, two special studies were prepared by the Planning Commission four years ago. One of these explained the methods which had been developed in different parts of the country and the problems which had been encountered. The second study set out suggestions for speedy execution of the programme of consolidation. Although consolidation of holdings has been regarded as an integral part of the agricultural production programme, in practice the two programmes are not always co-ordinated. Except where consolidation of holdings is already being undertaken on a large scale, in view of the limitations of trained personnel, it would appear desirable to concentrate consolidation work in areas which are already receiving irrigation or are likely to come under irrigation. The Planning Commission propose to study more closely how best the factors which come in the way of extension of the consolidation programme in the southern and eastern parts of the country can be overcome and what changes and adaptations in the present methods and system of consolidation are called for in these areas.

## LAND MANAGEMENT LEGISLATION

34. The place to be assigned to land management legislation and the manner in which it should be applied need to be considered in the light of developments during the first two Plans. In the First Plan, while land management legislation was intended to be general in scope, its specific applications were to be in relation to farms held by substantial owners. In the proposals in the Second Plan the object was that land management legislation should provide for standards of efficient cultivation and management which would permit objective and qualitative judgments. If farms could be classified into certain grades, those above the average could receive suitable encouragement, while those falling below the average could be assisted to come up to higher standards. For certain purposes the legislation could provide for sanctions. Legislation regarding land management has been enacted only in two States and in one Union Territory and even in these it has not been actually implemented. A large number of enactments exist in the States for certain specific agricultural purposes such as utilisation of waste lands, adoption of improved seeds, control of pests and diseases, etc. Much of this legislation is fairly old and needs to be reviewed in relation to the present development programmes for agriculture and the extension services which have been brought into existence in the community development blocks. While it will be of value to bring together the best experience in land management practices for the guidance of farmers, cooperatives and panchayats, the question of enforcing legislative sanctions and of the role of panchayats and panchayat samitis has to be studied further in consultation with the States and in the light of the experience gained by them in working the existing enactments.

## PROBLEMS OF IMPLEMENTATION

35. Problems arising in the implementation of land reform legislation enacted in the States have been studied by the Panel on Land Reform and the urgent tasks to be performed have been listed separately in respect of abolition of intermediaries, tenancy reforms and ceilings. The Panel has laid particular stress on the preparation of correct and up-to-date records of rights and on the need to strengthen the revenue administration. Records of rights have been brought up-to-date in several areas, but in some of them there is need for a more intensive programme of work. In several States, records of rights do not provide information regarding tenants, sub-tenants and crop-sharers, and as such implementation of the legislation itself suffers. Expenditure incurred on cadastral surveys and in the preparation and correction of records of rights has been included in the plans of some States and is eligible for Central assistance. Provisions made for these purposes would need to be augmented as the work proceeds.

36. A number of surveys of land reform have been undertaken in different parts of the country through the Research Programmes Committee of the Planning Commission. They bring out the problems encountered in enforcing the legislation. In view of the wide scope of the legislation which has been enacted and differences in conditions, it is desirable to extend these studies on a systematic basis. For this purpose the assistance of universities and leading research centres should be fully availed of. The aim should be to cover different areas in accordance with a general scheme and to arrange for the evaluation of land reforms both in the transitional phase and from the aspect of long-term economic and social effects.

37. The Planning Commission has under preparation a report on the progress of land reform which brings together the essential features of legislation enacted in different States. This study will also set out data regarding land holdings and cultivation collected at the census organised in 1954-55, which have been summarised in Annexure II of this Chapter.

## ANNEXURE I

## Ceiling on existing holdings—level of ceiling

State	level of ceiling	remarks
Andhra Pradesh:	4½ times the family holding i.e., 27 to 324 acres (a family holding varies from 6 acres of wet land bearing settlement taram No. 1 or settlement classification of 15 annas and above to 72 acres of dry land with taram above 5 and chalka soils with assessment below 8 annas).	Allowance made for size of family - additional one family holding for every member in excess of five. There is no outside limit.
Assam :	50 acres	No allowance for size of family.
Bihar: (Bill as reported upon by the Select Committee)	<p>(a) land irrigated by flow irrigation work constructed and maintained by Government : . . . . . 24 acres</p> <p>(b) land irrigated by lift irrigation work or tubewell constructed or maintained by Government: . . . . . 36 acres</p> <p>(c) land which is orchard and other lands not included in any other category: . . . . . 48 acres</p> <p>(d) diara land: . . . . . 60 acres</p> <p>(e) hilly, sandy and other lands not yielding paddy, rabi or cash crop: . . . . . 72 acres</p>	Allowance made for size of family subject to an outside limit of twice the ceiling area.
Gujarat:	<p>(i) dry crop land (including land irrigated from non-Government sources) . . . . . 56 to 132 acres</p> <p>(ii) rice land and seasonally irrigated land . . . . . 38 to 88 acres</p> <p>(iii) perennially irrigated land . . . . . 19 to 44 acres</p> <p>(The ceiling varies in different local areas as specified in the Act)</p>	No allowance for size of family
Jammu and Kashmir:	22½ acres	No allowance for size of family.
Kerala: . . . . .	15 acres of double crop paddy land or equivalent area (equivalent areas vary between 15 to 37½ acres)	Allowance made for size of family subject to an outside limit of 25 acres of double crop paddy land or its equivalent area. For an unmarried adult person the ceiling limit would be half the ceiling area.

State	level of ceiling	remarks
Madhya Pradesh:	28 standard acres (a standard acre means one acre of perennially irrigated land, 2 acres of seasonally irrigated land and 3 acres of dry crop land). A Bill has been passed to reduce the limit to 25 standard acres and outside limit for a larger family to 50 standard acres.	Allowance made for size of family subject to an outside limit of 53 standard acres.
Madras:(Bill)	30 standard acres (standard acre varies depending on rate of assessment and class of land between 1 to 4 acres)	Allowance made for size of family—additional 5 standard acres for each member in excess of five subject to an outside limit of 60 standard acres.
Maharashtra:	(i) perennially irrigated land by flow irrigation: 18 acres (ii) seasonally irrigated lands by flow irrigation (a) irrigated for two seasons: 27 acres (b) irrigated for one season: 48 acres (iii) dry lands (including lands irrigated from non-Governmental sources): 66 to 126 acres in different local areas.	Allowance made for size of family subject to an outside limit of twice the ceiling area.
Mysore:(Bill as reported upon by the Select Committee)	27 standard acres (standard acre varies from one acre of wet land with assured irrigation on which two paddy crops can be raised to 8 acres of dry or garden land with less than 25 inches of annual rainfall).	Allowance made for size of family subject to outside limit of twice the ceiling area.
Orissa:	25 standard acres (standard acre varies from one acre of perennially irrigated land which is assured of water supply for at least three crops in a year to 4 acres of dry land).	Allowance made for size of family subject to an outside limit of twice the ceiling area.
Punjab : Punjab area:	30 standard acres not exceeding 60 ordinary acres. In case of displaced persons, 50 standard acres not exceeding 100 ordinary acres.	No allowance for size of family.
Pepsu area:	30 standard acres not exceeding 80 ordinary acres. In case of displaced persons, 40 standard acres not exceeding 100 ordinary acres.  (Standard acre means an acre of land yielding between 10 and 11 maunds of wheat per acre matured).	No allowance for size of family.
Rajasthan:	30 standard acres (standard acre means land yielding 10 maunds of wheat or any other crop of equal value).	Allowance made for size of family subject to an outside limit of 60 standard acres.



State	level of ceiling	remarks
Uttar Pradesh:	40 acres of fair quality land (an acre of fair quality land means an acre of land with hereditary rate of rent exceeding Rs.6; $1\frac{1}{2}$ acres with rate between Rs.4 and Rs.6; and 2 acres with rate at Rs.4 per acre or less).	Allowance made at 8 acres of fair quality land for each member in excess of five subject to an outside limit of 64 such acres.
West Bengal:	25 acres.	No allowance for size of family.
Delhi:	30 standard acres (standard acre varies from $\frac{4}{5}$ th of an acre of irrigated land to 2 acres of Barani land).	Allowance made for size of family subject to an outside limit of 60 standard acres.
Himachal Pradesh:	30 acres in district Chamba and land assessed to Rs. 125 in other districts.	No allowance made for size of family.
Manipur:	25 acres.	Allowance made for size of family subject to an outside limit of 5 acres.
Tripura:	25 standard acres (standard acre varies from one acre of nal or lunga land to 3 acres of tilla land).	Allowance made for size of family subject to an outside limit of 50 standard acres.

## ANNEXURE II

## Census of land holdings and cultivation

## EXPLANATORY NOTE

As recommended in the First Plan, a census of land holdings and cultivation was carried out in 1954-55 in all States except Assam, West Bengal and Jammu and Kashmir and the Union Territories of Manipur and Tripura. In Assam and West Bengal, the State Governments had already collected certain data regarding land holdings. West Bengal had already enacted legislation for ceilings, in Assam a Bill had been passed and in Jammu & Kashmir a ceiling had been imposed earlier. A new census was not considered necessary in these States. In Manipur and Tripura the proposal to conduct the census was dropped due to lack of trained personnel and difficulties of terrain.

2. The census was based on complete enumeration of all holdings in the former States of Andhra, Bombay, Madhya Pradesh, Madras, Hyderabad, Madhya Bharat, Saurashtra, Ajmer, Bhopal and Kutch. In Punjab and in the former States of Mysore, Coorg, Delhi, Himachal Pradesh and Vindhya Pradesh, with a view to expediting the census, the enumeration was restricted to holdings of 10 acres and above. However, estimates of holdings below 10 acres were also made. In Bihar, Orissa, Rajasthan, Uttar Pradesh and in the former State of Travancore-Cochin sample surveys were undertaken.

3. The data relate generally to the year 1953-54. The main concepts employed in the census were the following:

- (1) The census related to agricultural land comprised in owners' holdings, agricultural land being defined as the cultivable area, comprised in a holding, including groves and pastures. Unoccupied area such as forest land and other uncultivable land, was to be excluded. Land held in urban areas was also outside the scope of the census.
- (2) The expression 'area owned' was defined so as to include lands held by owners as well as those held under occupancy (permanent and heritable) rights. Land owned by a person 'A' but held under rights of occupancy by a person 'B' was thus included in B's holding and excluded from 'A's holding. It was further agreed that persons who did not possess permanent and heritable rights de jure but enjoyed them for all practical purposes, should also be treated as owners.
- (3) The entire agricultural land held by a person as owner throughout the State constituted a single holding. In the case of joint holdings, the share of each co-sharer was treated as a separate holding.

- (4) Area under 'personal cultivation' was defined as the difference between 'area owned' and 'area leased'. The 'area leased' represents land let out to a tenant in which he has not acquired permanent and heritable rights.

4. To the extent they were available at the time, the results of the land census data were presented in summary form in the Second Five Year Plan. The data were subsequently retabulated for the States as reorganised in 1956. In this form they are set out in the tables which follow except for Bihar and Orissa. The Bihar Government felt that the data collected in the sample survey did not represent even approximately a correct picture of ownership and cultivation. The data received from Orissa were incomplete.

## Distribution and size of holdings

(A) States where complete enumeration of holdings of all size groups was conducted

(in thousands)												
grades of holdings (in acres)												
	not ex- ceeding	all grades										
		2.5	2.5-5.0	5-10	10-20	20-30	30-40	40-60	60-100	above 100		
I. ANDHRA—(i) Former Andhra area												
a area owned	{ number of holdings	1253	514	423	272	87	39	31	17	9	2645	
	{ percentage	(47.4)	(19.4)	(16.0)	(10.2)	(3.3)	(1.5)	(1.2)	(0.6)	(0.4)	(100)	
	{ area	1417	1853	2976	3790	2115	1318	1491	1258	1816	18034	
b area under personal culti- vation (1)	{ percentage	(7.9)	(10.3)	(16.5)	(21.0)	(11.7)	(7.3)	(8.2)	(7.0)	(10.1)	(100)	
	{ number of holdings	1188	486	396	253	80	35	27	14	7	2486	
	{ percentage	(47.8)	(19.6)	(15.9)	(10.2)	(3.2)	(1.4)	(1.1)	(0.6)	(0.2)	(100)	
c area leased	{ area	1303	1713	2739	3478	1900	1174	1295	1048	1151	15801	
	{ percentage	(8.3)	(10.8)	(17.3)	(22.0)	(12.1)	(7.4)	(8.2)	(6.6)	(7.3)	(100)	
	{ area	96	122	192	247	150	100	133	137	371	1548	
	{ percentage	(6.2)	(7.9)	(12.4)	(15.9)	(9.7)	(6.5)	(8.6)	(8.9)	(23.9)	(100)	
	{ owned	6.7	6.6	6.5	6.5	7.1	7.6	8.9	10.8	20.5	8.6	
(ii) Telengana area(2)												
a area owned	{ number of holdings	388	263	331	311	126	64	59	37	28	1607	
	{ percentage	(24.2)	(16.4)	(20.6)	(19.4)	(7.8)	(4.0)	(3.6)	(2.3)	(1.7)	(100)	
	{ area	447	968	2416	4413	3101	2196	2853	2863	5776	25033	
	{ percentage	(1.8)	(3.9)	(9.6)	(17.6)	(12.4)	(8.8)	(11.4)	(11.4)	(23.1)	(100)	

(1) Does not include cultivable land lying fallow for more than a year.

(2) Area in terms of 'dry acres'. Ordinary acres have been converted into dry acres by equating one wet acre to 6 acres, on an average.

(A) States where complete enumeration of holdings of all size groups was conducted

(in thousands)

## grades of holdings (in acres)

not ex-  
ceedingall  
grades  
above  
100

## Telengana area—(contd.)

b area under personal cultivation	number of holdings percentage area	379 (25.1) 441 (2.0)	249 (16.5) 945 (4.4)	308 (20.5) 2255 (10.4)	287 (19.0) 4086 (18.8)	118 (7.8) 2870 (13.3)	58 (3.9) 2013 (9.3)	53 (3.5) 2566 (11.9)	34 (2.2) 2535 (11.7)	21 (1.5) 3936 (18.2)	1507 (100) 21647 (100)
c area leased	area	32	81	203	397	277	219	302	319	1556	3386
	percentage	(0.9)	(2.4)	(6.0)	(11.8)	(8.1)	(6.4)	(9.0)	(9.4)	(46.0)	(100)
	percentage of area owned	7.2	8.4	8.4	9.0	8.9	9.9	10.6	11.2	26.9	13.5

2. GUJARAT AND MAHARASHTRA<sup>(1)</sup>

a area owned	number of holdings percentage area	1928 (29.6) 2309 (3.0)	1115 (17.1) 4129 (5.3)	1286 (19.7) 9320 (12.1)	1127 (17.3) 16097 (20.9)	473 (7.3) 11626 (15.1)	242 (3.7) 8368 (10.9)	201 (3.1) 9676 (12.6)	99 (1.5) 7355 (9.5)	42 (0.7) 8160 (10.6)	6513 (100) 77040 (100)
b area under personal cultivation (2)	area	1723	999	1137	1005	424	216	179	85	30	5798
	percentage	(29.7)	(17.2)	(19.6)	(17.3)	(7.3)	(3.8)	(3.1)	(1.5)	(0.5)	(100)
	percentage of area owned	1996	3662	8084	14139	10293	7411	8501	6201	5044	65330
	percentage	(3.1)	(5.6)	(12.4)	(21.6)	(15.8)	(11.3)	(13.0)	(9.5)	(7.7)	(100)
c area leased	area	360	658	1357	2114	1401	960	1123	1029	2516	11518
	percentage	(3.1)	(5.7)	(11.8)	(18.4)	(12.2)	(8.3)	(9.7)	(8.9)	(21.9)	(100)
	percentage of area owned	15.6	15.9	14.6	13.1	12.1	11.5	11.6	14.0	30.8	15.6

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## 3. MADHYA PRADESH (3)

a area owned	{ number of holdings	4324	754	260	111	85	43	22	5599
	{ percentage	(77.2)	(13.5)	(4.6)	(2.0)	(1.5)	(0.8)	(0.4)	(100)
	{ area	14250	10587	6312	3827	4108	3232	4119	46435
b area under personal cultivation (4)	{ percentage	(30.7)	(22.8)	(13.6)	(8.2)	(8.8)	(7.0)	(8.9)	(100)
	{ number of holdings	1643	839	214	90	67	33	16	4408
	{ percentage	(37.3)	(19.0)	(4.9)	(2.0)	(1.5)	(0.8)	(0.4)	(100)
c area leased	{ area	1650	8932	5185	3072	3216	2461	2872	36615
	{ percentage	(4.5)	(16.9)	(14.2)	(8.4)	(8.8)	(6.7)	(7.8)	(100)
	{ area (4)	101	555	338	219	264	245	528	2798
	{ percentage	(3.6)	(19.7)	(12.1)	(7.9)	(9.4)	(8.8)	(18.9)	(100)
	{ percentage of area owned	—	—	5.4	5.7	6.4	7.5	12.8	—

## 4. MADRAS (5)

a area owned	{ number of holdings	1852	934	739	391	104	42	18	4124
	{ percentage	(44.9)	(22.6)	(17.9)	(9.5)	(2.5)	(1.1)	(0.3)	(100)
	{ area	2231	3360	5136	5389	2525	1424	1357	25768
b area under personal cultivation (6)	{ percentage	(8.7)	(13.0)	(19.9)	(21.0)	(9.8)	(5.5)	(5.3)	(100)
	{ number of holdings	1786	884	691	362	93	37	28	3905
	{ percentage	(45.7)	(22.6)	(17.7)	(9.3)	(2.4)	(0.9)	(0.4)	(100)
c area leased	{ area	2167	3170	4808	4962	2237	1315	1113	23038
	{ percentage	(9.4)	(13.8)	(20.8)	(21.5)	(9.7)	(5.7)	(4.8)	(100)
	{ area	114	375	286	362	200	138	208	817
	{ percentage	(4.6)	(7.0)	(11.5)	(14.6)	(8.0)	(5.5)	(7.6)	(100)
	{ percentage of area owned	5.1	5.2	5.6	6.7	7.9	9.7	12.1	29.2
		—	—	—	—	—	—	—	9.7

- (1) Data for Gujarat and Maharashtra are not available separately. In Marathwada, area of holdings has been expressed in terms of 'dry acres'. One ordinary acre is, on an average, equal to 1.002 dry acres. Since the difference is small, in working out the distribution of holdings for the state as a whole, a dry acre has been equated to an ordinary acre.
- (2) In Kutch area, the cultivable waste lands held by owners have been included in 'area owned', but not in area under personal cultivation.
- (3) Excludes Sironj sub-division transferred from former Rajasthan, as no census was conducted in this area.
- (4) Excludes Vindhya Pradesh area.
- (5) The data refer to Madras excluding the area transferred from the former state of Travancore-Cochin for which data are not available. Besides, area of holdings has been expressed in terms of 'dry acres'. One wet acre has been deemed to be equal to 'three dry acres'.
- (6) Lands left waste due to the negligence of the owner and 'mamool' waste, though included in area owned, have been excluded from area under personal cultivation.



c area leased

area . . . . .	751	495	342	437	439	858	3322*
percentage of area owned . . . . .	(18.6)	(21.3)	(23.7)	(27.9)	(34.4)	(52.4)	(27.0)*

3. DELHI

a area owned

number of holdings . . . . .	87	1	(n)	(n)	(n)	(n)	92
percentage . . . . .	(94.6)	(0.9)	(0.2)	(0.1)	(0.1)	(n)	(100)
area . . . . .	152	19	8	5	3	3	241
percentage . . . . .	(62.9)	(7.9)	(3.5)	(2.0)	(1.2)	(1.3)	(100)

b area under personal cultivation

number of holdings . . . . .	4	1	(n)	(n)	(n)	(n)	5*
percentage . . . . .	(4.1)	(0.9)	(n)	(n)	(n)	(n)	5*
area . . . . .	51	19	8	4	3	2	87*
percentage . . . . .	(21.2)	(7.9)	(3.5)	(2.0)	(1.2)	(1.3)	(100)

area leased

area . . . . .	1	1	(n)	(n)	(n)	(n)	2*
percentage of area owned . . . . .	(1.6)	(2.5)	(3.5)	(5.0)	(5.0)	(10.1)	(2.6)*

Note:—(1) In Mysore and Coorg areas, holdings of 10 acres and above were enumerated, but in areas transferred from Bombay, Hyderabad and Madras, holdings of all size groups were enumerated.

(2) In Karnataka, area of holdings has been expressed in terms of 'dry acres'. One ordinary acre, on an average, is equal to 1.01 dry acres. Since the difference is small, in working out the distribution of holdings for the state as a whole, a dry acre has been equated to an ordinary acre.

\*Relates to holdings of 10 acres and above.

(n) Means less than 500 or 0.05%.



(B) States where the enumeration was restricted to 10 acres or more

		(in thousands)									
		grades of holdings (in acres)									
		not exceeding									
		10	10-20	20-30	30-40	40-60	60-100	above 100	all grades		
4. HIMACHAL PRADESH (1)											
a	area owned .	{	number of holdings	.	621	8	(n)	(n)	(n)	630	
		{	percentage .	.	(98.5)	(1.2)	(0.2)	(n)	(n)	(100)	
		{	area .	.	539	101	31	11	8	10	707
		{	percentage .	.	(76.2)	(14.3)	(4.4)	(1.6)	(1.1)	(0.9)	(100)
b	area under personal cultivation	{	number of holdings	.	—	7	1	(n)	(n)	9*	
		{	area .	.	—	97	30	10	7	6	160*
		{	area .	.	—	4	1	1	1	(n)	8*
		{	percentage of area owned	.	(3.9)	(4.1)	(7.7)	(6.7)	(7.0)	(9.0)	(4.7)*

(1) In Chamba district, the census was carried out in Bhatiyat tehsil; in 58 random villages of Chamba tehsil and 36 random villages in Churah tehsil.

(n) Means less than 500 or 0.05%.

\* Related to holdings of 10 acres and above.

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(C) States where enumeration of holdings was on sample basis

		grades of holdings (in acres)										(in thousands)
		not exceeding 2.5	2.5—5.0	5—10	10—20	20—30	30—40	40—60	60—100	above 100	all grades	
I. KERALA—(i) Travancore-Cochin												
a area owned	number of holdings	1974	191	80	26	6	2	4	2283			
	percentage	(86.5)	(8.4)	(3.5)	(1.1)	(0.3)	(0.1)	(0.1)	(100)			
	area	1229	668	541	340	146	72	327	3323			
	percentage	(37.0)	(20.1)	(16.3)	(10.2)	(4.4)	(2.2)	(9.8)	(100)			
b area under personal cultivation	number of holdings	1958	176	67	20	4	1	2	2228			
	percentage	(87.9)	(7.9)	(3.0)	(0.9)	(0.1)	(0.1)	(0.1)	(100)			
	area	1346	621	456	262	86	42	144	2957			
	percentage	(45.5)	(21.0)	(15.5)	(8.8)	(2.9)	(1.4)	(4.9)	(100)			
c area leased	area	38	31	51	40	29	19	158	366			
	percentage of area owned	(10.5)	(8.5)	(14.1)	(10.9)	(7.9)	(5.1)	(43.0)	(100)			
		3.1	4.7	9.5	11.7	19.9	25.8	48.2	11.0			
(ii) Malabar (1)†												
a area owned	number of holdings	374	130	103	73	20	9	5	725			
	percentage	(51.5)	(18.0)	(14.2)	(10.0)	(2.8)	(1.3)	(0.6)	(100)			
	area	416	480	740	1022	488	334	351	5254			
	percentage	(7.9)	(9.1)	(14.1)	(19.4)	(9.3)	(6.4)	(6.7)	(100)			
b area under personal cultivation (2)	number of holdings	372	129	102	72	20	9	4	718			
	percentage	(51.7)	(17.9)	(14.2)	(10.0)	(2.8)	(1.3)	(0.6)	(100)			
	area	416	476	728	1010	477	262	334	4918			
	percentage	(8.5)	(9.7)	(14.8)	(20.6)	(9.7)	(5.3)	(6.8)	(100)			
c area leased	area	4	4	7	15	14	12	17	175			
	percentage of area owned	(2.4)	(2.3)	(3.8)	(8.3)	(7.9)	(6.6)	(9.7)	(100)			
		1.0	0.8	0.9	1.3	2.9	3.6	3.5	8.6			
									3.3			

(1) Census was based on complete enumeration of holdings of all size groups. Area has been expressed in terms of 'dry acres'.  
 (2) Lands left waste due to the negligence of the owner and 'mamool' waste, though included in area owned, have been excluded from area under personal cultivation.



(1) Data relate to 22 selected tehsils.  
(2) Data collected based on complete enumeration of holdings of all size groups.  
(n) Means less than 500 or 0.5%.  
(3) Data relate to 204 sample villages. No estimates were made for the states as a whole.

## CHAPTER XV

### LABOUR POLICY

LABOUR policy in India has been evolving in response to the specific needs of the situation in relation to industry and the working class and has to suit the requirements of a planned economy. A body of principles and practices has grown up as a product of joint consultation in which representatives of Government, the working class and employers have been participating at various levels. The legislation and other measures adopted by Government in this field represent the consensus of opinion of the parties vitally concerned and thus acquire the strength and character of a national policy, operating on a voluntary basis. Joint committees have been set up to assist in the formulation of policies as well as their implementation. At the apex of this tripartite machinery is the Indian Labour Conference.

#### RECENT DEVELOPMENTS

2. The structure of industrial relations has been designed for the purpose of securing peace in industry and a fair deal for the workers. When the efforts of the parties fail to secure an amicable settlement of industrial disputes, the Government has assumed powers of intervention. Provision has been made for conciliation of disputes and for enabling the State to refer unresolved differences to tribunals set up for the purpose. Stoppages of work after such a reference and any contravention of awards and agreements have been made illegal. This system has helped to check the growth of industrial unrest and has brought for the working class a measure of advance and a sense of security which could not otherwise have been achieved. At the same time, the spirit of litigation grew and delays attendant on legal processes gave rise to widespread dissatisfaction. In the course of the Second Five Year Plan a new approach was, therefore, introduced to counteract the unhealthy trends and give a more positive orientation to industrial relations, based on moral rather than legal sanctions. The stress now is on prevention of unrest by timely action at the appropriate stages and giving adequate attention to root causes. This involves a basic change in the attitudes and outlook of the parties and the new set of readjustments in their mutual relations.

3. A Code of Discipline in Industry, which applies both to the public and to the private sector, has been accepted voluntarily by all the Central organisations of employers and workers and has been in operation since the middle of 1958. The Code lays down specific obligations for the management and the workers with the object of promoting constructive cooperation between their representatives at all levels, avoiding stoppages

as well as litigation, securing settlement of disputes and grievances by mutual negotiations, conciliation and voluntary arbitration, facilitating the free growth of trade unions and eliminating all forms of coercion and violence in industrial relations.

4. The Code provides that a regular grievance procedure be laid down in all undertakings and complaints should receive prompt attention. The legal means of redress and the normal channels should be fully availed of and there should be no direct, arbitrary or unilateral action on either side. Under the Code, management and workers have agreed to avoid litigation, lock-outs, sit-down and stay-in strikes. There will be no recourse to intimidation, victimisation or 'go-slow.' The unions have also agreed not to engage in any form of physical duress and to discourage unfair practices such as negligence of duty, careless operation, damage to property, interference with or disturbance to normal work and insubordination. The employers have to allow full freedom to workers in the formation of trade unions and to abide by the criteria adopted for determining which union has a better claim to recognition. A union guilty of a breach of the Code of Discipline loses its right to such recognition. Both sides are pledged to the scrupulous and prompt implementation of awards, agreements, settlements and decisions. Organisations of employers as well as workers have bound themselves to express disapproval and take appropriate action against officers, office-bearers and workers who violate the letter or spirit of the Code.

5. It is obvious that a new concept with such far-reaching aims, in a difficult field, requires a considerable period of earnest endeavour before it gets firmly established in practice. The results so far achieved are, however, encouraging both in terms of the reduction of man-days lost owing to stoppages and in bringing about a general improvement in the climate of industrial relations. The number of man-days lost declined steadily and significantly from 47 lakh during January-June 1958, the six months prior to the introduction of the Code, to 19 lakh during July-December, 1960. The Code has also been successful in creating an awareness amongst the employers and workers of their obligations towards each other; the desire to settle disputes mutually without recourse to the wasteful methods of trial of strength and litigation is steadily growing.

6. The deplorable consequences of inter-union rivalry both for industry and for the workers are well-known. They have been mitigated to some extent by the Code of Conduct which was drawn up and accepted by the representatives of workers' organisations three years ago. The Code provides that every employee shall have the freedom and right to join a union of his choice. Ignorance and backwardness of workers shall

not be exploited by any organisation. Casteism, communalism and provincialism shall be eschewed by all unions, and there shall be no violence, coercion, intimidation or personal vilification in inter-union dealings. It is enjoined that there shall be unreserved acceptance of and respect for democratic functioning of trade unions and all Central organisations shall combat the formation and continuance of company unions.

7. The failure to implement awards and agreements has been a common complaint on both sides and if this were to continue, the Codes would be bereft of all meaning and purpose. A machinery for implementation and evaluation has, therefore, been set up at the Centre and in the States to ensure observance by the parties of the obligations arising from the Codes and from laws and agreements.

8. Two lines of advance during the period of the Second Plan deserve special mention because of their great significance as elements of labour policy and for the reason of the great promise they hold for the future. In the first place to give the workers a sense of belonging and to stimulate their interest in higher productivity, a form of workers' participation in management was evolved during the Second Plan. A small beginning was made in this direction on an experimental basis and Joint Management Councils have been set up so far in 23 units. The Council has the right to obtain information regarding the working of the undertaking and has direct administrative responsibility for matters concerning workers' welfare, training and allied matters. Its main function is to bring about mutual consultation between employers and workers over many important issues which affect industrial relations. In a seminar held in March, 1960, representatives of employers, workers, State Governments and others concerned reviewed their experience of the working of the Joint Councils and the solutions they had evolved for specific problems. Keeping in view the short duration of the experiment, its results have been found to be satisfactory and heartening. Secondly, after completion of the preparatory stage, the programme of workers' education has made a good start and is being widely appreciated. The scheme comprises the training of teacher-administrators and worker-teachers. The latter, on returning to their establishments on the completion of their training, start unit-level classes for the rank and file of the workers. According to an independent appraisal of the working of this scheme, these courses have helped to raise the self-confidence of the workers, increased their ability to take advantage of protective labour laws, reduced their dependence upon outsiders and inculcated in them an urge for material and economic welfare. A beginning was made in sponsoring investigations on labour problems through independent research institutions with Government support.

## APPROACH AND OUTLOOK

9. The coming years should witness the fuller impact of the ideas which have been tried and found useful during the Second Plan period. The Third Five Year Plan has to make its own contribution towards the evolution of labour policy and the realisation of its basic aims. It has always to be kept in view that the measures that are adopted must serve adequately the immediate and long-term ends of planned economic development. Economic progress has to be rapid enough to attain a level of full employment, and secure a rising standard of living for the people. The fruits of progress should be shared in an equitable manner and the economic and social organisation which is being created must be in keeping with the concept of a socialist society. In the implementation of these objectives the working class has an important role and a great responsibility, and these will grow with the rising tempo of industrialisation. The large expansion of the public sector which is occurring and is being envisaged will make a qualitative difference in the tasks set for the labour movement and will facilitate the transformation of the social structure on the lines of the socialist pattern in view. The implications of this approach are manifold. Economic activity has not to be conceived of solely in terms of output and return; the principal test of this would be the good of all those who are engaged in it, the quality and growth of the individual human being and the service and happiness of the entire community. The surpluses that are generated are a social product, to which neither the employer nor the working class can lay an exclusive claim; their distribution has to be according to the worth of the contribution of each, subject to the requirements of further development and the interests of all the sections of society, in particular, the satisfaction of the basic needs of all its members. While jobs and functions may vary, all are workers of different grades. Those of the lowest rank and their children should be fortified in the faith that they are free to equip themselves to be able to rise to the highest positions and that the worker and management are joined in partnership to strive for common ends. Thus, a new type of community is being created in which individuals and groups are moved more by a sense of mutual obligations than the spirit of acquisitiveness or the making of private gains at the expense of the general well-being.

## INDUSTRIAL RELATIONS

10. The development of industrial relations in the Third Five Year Plan rests on the foundations created by the working of the Code of Discipline which has stood the strain of the test during the last three years. A full awareness of the obligations under the Code of Discipline has to extend to all the constituents of the Central organisations of



employers and workers, and it has to become more and more a living force in the day-to-day conduct of industrial relations. The sanctions on which the Code is based have to be reinforced, relying on the consent of the parties, for this purpose.

11. Ways will be found for increasing the application of the principle of voluntary arbitration in resolving differences between workers and employers. Steps will be taken to remove certain hindrances in the way of a fuller recourse to voluntary arbitration. The same protection should be extended to proceedings in this case, as is now applicable to compulsory adjudication. Government should take the initiative in drawing up panels of arbitrators on a regional and industry-wise basis. Employers should show much greater readiness to submit disputes to arbitration than they have done hitherto. This has to be the normal practice, in preference to a recourse to adjudication, as an important obligation accepted by the parties under the Code.

12. The law provides for the establishment of Works Committees at the plant level in order to develop harmonious relations between employers and workers. According to a recent assessment, the system has proved its capacity to render substantial help in composing differences between the parties though, owing to lack of earnest effort, the Committees are not functioning effectively in some units. The decision to demarcate the functions of Works Committees, as distinct from those of trade unions, will remove an obstacle in the way of the successful functioning of the Committees. It is, thus, essential that Works Committees are strengthened and made an active agency for the democratic administration of labour matters.

13. *Joint Management Councils.*—A major programme for the period of the Third Five Year Plan will be the progressive extension of the scheme of Joint Management Councils to new industries and units so that, in the course of a few years, it may become a normal feature of the industrial system. As it develops, workers' participation may become a highly significant step in the adaptation of the private sector to fit into the framework of a socialist order. It can serve to bridge the gulf between labour and management, create better mutual understanding and facilitate the adoption, on both sides, of an objective approach towards the problems of industry and the workers. The success or failure of an undertaking is not the concern of management alone. For the peaceful evolution of the economic system on a democratic basis, it is essential that workers' participation in management should be accepted as a fundamental principle and an urgent need. In course of time, management cadres should arise out of the working class itself. This will greatly help to promote social mobility which is an important ingredient of a socialist system.

14. Joint Management Councils should be set up in all establishments in the public as well as the private sector in which conditions favourable to the success of the scheme exist. A primary test of eligibility is the presence of goodwill on both the sides. Wherever a representative union exists, a Council should come into being as a matter of course. An intensive programme of workers' education will be undertaken in all the establishments where such Councils are set up.

15. *Workers' education.*—The programme of workers' education which Government has undertaken through a semi-autonomous Board is being run with the cooperation of all the employers' and workers' organisations. A large-scale expansion of this scheme is visualised for the period of the Third Plan. It is intended to diversify the programme and secure fuller association of workers' representatives and their organisations. The complementary question of management training in labour matters is also receiving consideration.

16. The spread of literacy among the workers is an indispensable precondition for the success of the various programmes that are being undertaken. The benefit of literacy should be made available to as large a number of workers as possible in the next few years, particularly to those below the age of forty.

17. *Trade unions.*—There is need for a considerable re-adaptation in the outlook, functions and practices of trade unions to suit the conditions which have arisen and are emerging. They have to be accepted as an essential part of the apparatus of industrial and economic administration of the country and should be prepared for the discharge of the responsibilities which attach to this position. Trade union leadership has to grow progressively out of the ranks of the workers, and this process will be greatly accelerated as the programme of workers' education gathers momentum. At present, the trade unions are in most cases labouring under the handicap of insufficient resources and are not in a position to obtain all the help and guidance that they need.

18. The basis for recognition of unions, adopted as a part of the Code of Discipline, will pave the way for the growth of a strong and healthy trade unionism in the country. A union can claim recognition, if it has a continuing membership of at least 15 per cent of the workers in the establishment over a period of six months and will be entitled to be recognised as a representative union for an industry or a local area, if it has membership of at least 25 per cent of workers. Where there are several unions in an industry or establishment, the union with the largest membership will be recognised. Once a union has been recognised, there should be no change in its position for a period of two years, if it has been adhering to the provisions of the Code of Discipline.

19. The personnel of the industrial relations machinery calls for greater attention in respect of selection as well as training. It is necessary to ensure that the quality and equipment of conciliators and tribunals are adequate for the complex tasks which now confront them. It is proposed to institute a suitable training programme for this purpose.

#### WAGES AND SOCIAL SECURITY

20. The Government has assumed responsibility for securing a minimum wage for certain sections of workers, in industry and agriculture, who are economically weak and stand in need of protection. Towards this end the Minimum Wages Act provides for the fixation and revision of wage rates in these occupations. These measures have not proved effective in many cases. For better implementation of the law, the machinery for inspection has to be strengthened. Wage determination in major industries is left to the process of collective bargaining, conciliation, arbitration and adjudication. The Second Plan recommended the setting up of Wage Boards as the most suitable method of settling wage disputes where large areas of industry are concerned. This has so far been applied to the cotton and jute textiles, cement, sugar and plantation industries; and will be extended to other industries according to circumstances. It has been decided to appoint a Board soon for the iron and steel industry. The representatives of employers and workers have agreed that unanimous recommendations of a wage board should be implemented fully. An encouraging trend has been noticed in the coal mining industry where employers and workers have agreed to set up a bi-partite committee to examine the entire question of wage revision in the industry; alternative wage-fixing machinery will be considered only if the bi-partite committee fails to arrive at a settlement.

21. Some broad principles of wage determination have been laid down in the Report of the Fair Wages Committee. On the basis of agreement between the parties, the Indian Labour Conference had indicated the content of the needbased minimum wage for guidance in the settlement of wage disputes. This has been reviewed and it has been agreed that the nutritional requirements of a working class family may be re-examined in the light of the most authoritative scientific data on the subject. Apart from the minimum wage, care should be taken in fixing fair wages for different classes of workers, that adequate incentives are provided for the acquisition and development of skills and for improvements in output and quality. There are, however, wide disparities between the wages of the working class, on the one hand, and the salaries at the higher management levels, on the other.

22. Owing to the uncertainty attaching to it, the question of bonus has become a source of friction and dispute. It has been decided to appoint a Commission which will include representatives of both parties to study the problems connected with bonus claims and to evolve guiding principles and norms for the payment of bonus.

23. *Social security.*—The Employees' State Insurance Scheme has now been implemented in more than a hundred centres covering about 17 lakh industrial workers. During the Third Plan period, the scheme will be extended to all centres where there is concentration of five hundred or more industrial workers, bringing the total coverage to about 30 lakh workers. Medical care and treatment including hospitalisation and midwifery services will be extended to the families of insured persons in all centres where the scheme is in operation. The preventive aspects will also receive greater attention. A great deal of leeway remains to be made up in the provision of separate hospital accommodation for the insured workers. The construction of new hospitals and dispensaries will be speeded up so as to add at least 6000 hospital beds during the period of the Third Plan.

24. The Employees' Provident Fund Scheme, which now covers 58 industries/establishments will be further extended. The employment limit for coverage under the scheme has already been lowered from 50 to 20. The Provident Fund Organisation has completed a survey of other industries and during the Third Plan the scheme will be extended to such industries among these as are able to bear the financial burden. The proposals to enhance the rate of contribution to the provident fund from  $6\frac{1}{4}$  to  $8\frac{1}{2}$  per cent has been already accepted by Government in principle, but in view of the varying capacity of different industries, a Technical Committee has been constituted to ascertain which industries are not capable of bearing the additional liability. It is also proposed to bring employees of commercial establishments within the purview of the scheme.

25. A Study Group on Social Security had recommended the integration of existing social security schemes and the conversion of the various Provident Fund schemes into a statutory scheme for old age, invalidity and survivorship pension-cum-gratuity. Urgent consideration has now to be given to the various aspects of the question of integration, so that the entire scheme takes shape as early as possible.

26. The social security approach has so far extended mainly to wage earners in organised industry. There are some groups whose condition calls for closer attention on the part of the community. In the past, on account of the traditional values associated with the small community and the joint family, a great deal of relief was available to those who

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were unable to provide for themselves. For a long period to come, in one form or another, the community, the group and the family must continue to be the main sources of assistance. Progressively, however, the State and local bodies, both urban and rural, will need to participate in schemes undertaken by way of social assistance and social security. Even at this stage, it would be desirable to make a modest beginning in respect of three groups of persons—the physically handicapped, old persons unable to work, and women and children—where they are altogether lacking in the means of livelihood and support. Assistance for them will have to come from voluntary and charitable organisations, municipal bodies, Panchayat Samitis and panchayats and voluntary organisations. With a view to enabling these organisations to develop their activities with the help of local communities, and giving them a little support, it might be useful to constitute a small relief and assistance fund. Details of the proposal should be considered further in cooperation with States and voluntary organisations.

#### WORKING CONDITIONS, SAFETY AND WELFARE

27. Under various laws, a comprehensive code has been developed to ensure satisfactory working conditions, safety of person and the provision of a variety of facilities to promote the welfare of the workers. Steps, however, have to be taken to make the implementation of the statutory provisions more effective. The improvement of working conditions can result in greater productive efficiency on the part of the workers. Every effort should be made to keep abreast of the modern developments in these and various other aspects relating to the human factor in industry. Towards this end, the activities of the Central Labour Institute and the three Regional Labour Institutes should be developed to provide a comprehensive service to industry through training, education and research. The problem of safety should receive greater attention. A Standing Advisory Committee will be set up to promote measures for bringing down the incidence of accidents in factories. State Governments have to strengthen the inspectorates provided for the administration of factory laws. Both in factories and in mines, a great deal of scope remains for reducing hazards by education of the workers in safety-consciousness and the setting up of safety committees. Steps are being taken in pursuance of the recommendations of the Mines Safety Conference and its various committees, and intensive studies are in progress concerning various aspects of the problem of safety in all mines. A National Mine Safety Council is proposed to be set up regarding safety education and propaganda in the mining industry. In view of the rapid expansion of the output of mines and the increase in depths and mechanisation to which it leads, it has become imperative that there should be greater vigilance and

stricter enforcement of rules and regulations. The building and construction industry is a similar field in which rapid programmes of expansion call for greater attention to safety standards. While the Central and State Public Works Departments are among the major employing authorities, a significant amount of building and construction work is in private hands. Working conditions at construction sites are very different from those in factories, primarily because of the purely "temporary" basis upon which most of the work is organised. The question of separate safety legislation for building and construction workers is under examination. Industrial hygiene surveys undertaken so far have disclosed that exposure to occupational disease has been increasing. The surveys should cover the remaining industries and prompt remedial action should be taken in each case. Special welfare funds have been constituted for financing welfare measures for workers in the coal and mica mining industries. They are meeting very real needs. Similar funds are proposed to be created for workers in the manganese and iron ore mines.

28. *Workers' cooperatives.*—Some progress has been made in the formation of miners' cooperative societies through the help of the Coal Mines Welfare Fund Organisation. A few workers' cooperative housing societies also exist in some industrial centres. On the whole, cooperation has not made much headway so far as the working class is concerned. It will derive immense benefit from the extension of cooperative activity in various forms. Campaigns should be undertaken for setting up cooperative credit societies and cooperative consumers stores. It is hoped that trade unions and voluntary organisations will evince greater interest and initiative in running such cooperatives.

29. *Industrial housing.*—Although the Subsidised Industrial Housing Scheme has been in operation for some years, the situation in respect of the housing of industrial workers has not improved and, in several centres, it has even deteriorated. The present approach to the problem has been found to be wholly inadequate and new ways will have to be devised immediately so that the workers may be assured of minimum standards in respect of living conditions within a reasonable period in the interest of their health and efficiency. Towards the same end, facilities for recreation and sports will have to be greatly enlarged for all sections of the workers.

30. *Other problems.*—With the help of studies which are now in progress regarding contract labour, it will be possible to select occupations in which contract labour will not be permitted and, where abolition is not feasible, to decide on the steps which can be taken to safeguard fully the interests of contract workers. While considerable improvement has occurred in the living and working conditions of employees in large and organised industries owing both to State activity and trade union action,

a great deal of leeway remains to be made up in respect of the workers engaged in agriculture and unorganised industries. Their conditions should become a matter of special concern to the Government as well as to the organisations of labour.

#### EMPLOYMENT AND TRAINING SCHEMES

31. A large increase in the demand for craftsmen will have to be met during the Third Plan. By the end of the Second Plan period, there were 166 industrial training institutes with 42,000 training seats. It is intended to increase the number of these institutes to a total of 318 by the end of the Third Plan with an additional 58,000 seats, raising the training capacity to 1 lakh craftsmen and an estimated out-turn of 2 lakh craftsmen during the Plan period. Adequate in-plant training facilities will also be provided. Separate facilities have been organised for the training of educated youth in the techniques of management so that such of them as have the inclination and aptitude for undertaking business responsibilities on their own or through cooperatives, will be provided with wider employment opportunities.
32. The capacity of the three existing Central Training Institutes for Craft Instructors will be raised from 512 to 976 seats and three other Central Institutes will be set up during the Third Plan period. As against 2000 in the Second Plan, 7800 instructors will be trained during the Third Plan. Separate arrangements are being made to train women craft instructors.
33. During the Second Plan, little progress has been registered under the apprenticeship training scheme, which has so far been carried out on a voluntary basis. It has now been decided to place the scheme on a compulsory footing and a Bill on the subject is proposed to be introduced in Parliament. A target of 14,000 seats has been set for the apprenticeship training programme. The target for the programme of evening classes for industrial workers is to raise the present 3000 seats to 15,000 seats during the Third Plan.
34. One hundred employment exchanges will be opened during the Third Plan with the object of providing at least one exchange in each district. It is also intended to increase the number of rural employment exchanges and strengthen the organisation of the State Employment Directorates. An effective start has been made with the Employment Market Information programme; the scheme now covers all public sector establishments and private sector units in 150 areas. The scheme will be extended to all areas covered by employment exchanges. Similar provision has been made for expanding the programme of Youth Employment Service, Youth Counselling and collection and analysis of occupational information undertaken by the exchanges.

35. Closures of establishments have occurred to a varying extent in certain industries during the last few years. Where unfavourable market conditions develop, marginal units are affected severely unless steps are taken in advance to safeguard their position. In several cases, the collapse follows a prolonged period of neglect and mismanagement. The workers, who are thrown out of employment, often fail to find avenues for absorption in other units in the same industry. It often happens that besides losing their jobs these workers are deprived of arrears of wages and even the collections in respect of Provident Fund or Employees' State Insurance cannot be recovered from the employers. As a result, the workers have to face acute distress.

36. It becomes evident that having regard to the human aspect, and for the purpose of preventing a sense of demoralisation among other workers, steps will have to be taken to afford a measure of relief and assistance to retrenched workers who are thus reduced to a state of helplessness. In a fully developed form such a scheme has to be on a contributory basis, with adequate support from the Government, and besides assistance and relief to the retrenched workers, its functions might include:

- (1) help to industrial units which are temporarily in financial difficulties but have otherwise a reputation for efficiency and good management;
- (2) taking over units for temporary management; and
- (3) financing, in suitable cases, co-operative ventures of workers threatened by closures.

A start has, however, to be made immediately, and it has now been decided to draw up a scheme of a limited scope to furnish such assistance as is practicable in the existing circumstances. This will be in the form of loans to tide over the immediate difficulties and facilities for retraining for alternative occupations and for transfer to other places where work may be available. A small financial provision has been made in the Plan for this purpose.

#### PRODUCTIVITY

37. Industry is being called upon to meet, as rapidly as possible, the claims on behalf of the workers for a living wage, better living and working conditions, the needed volume of employment opportunities and a fuller measure of social security. It must yield a reasonable return on capital and provide for capital formation on an adequate scale. Neither the exercise of their organised strength in industrial conflicts, nor laws and the intervention of the State can help the workers much in realising their aspirations. Their gains can arise only out of the strength and dynamism of the economy, the only enduring basis of which is a rising level of productivity. No increase in profits which



does not come out of improvements in productivity but has its origin in current scarcity and the stresses of development, can be regarded as a sign of prosperity. Productivity has many facets and it suffers because of the one-sided and rigid approach which is frequently adopted in dealing with it both by the employers and the workers. Rationalisation of effort in every direction is the true basis of productivity. The term has often been wrongly associated with increase in workloads and added strain on workers in order to swell the volume of private gains. Large gains in productivity and an appreciable reduction in unit costs can be secured in many cases without causing any detriment to the health of the workers and without incurring any large outlays. Greater responsibility in this respect rests on the management which should provide the most efficient equipment, correct conditions and methods of work, adequate training and suitable psychological and material incentives for the workers. For several purposes, it will be more helpful to take the working group as a unit of activity rather than the individual worker, and the scheme of incentives should be aimed at the group no less than at the individual. The industry, trade unions and the Government should together ensure that every worker whether employed already or freshly recruited receives adequate training to acquire the requisite skill and efficiency. By proper organisation, it should be possible to supply the essential needs of the workers at reasonable cost without unduly increasing the burden on industry. Management has to give the lead by bringing about the maximum rationalisation in its own sphere and eliminating all unjustifiable practices which at present act as disincentives in drawing the best out of the workers. The vicious circle of poverty and unemployment and low productivity can be broken only by a tremendous stress on the maximum possible contribution being made by all the participants in the processes of production. For the workers no real advance in their standard of living is possible without a steady increase in productivity, because any increase in wages generally, beyond certain narrow limits, would otherwise be nullified by a rise in prices. Workers have, therefore, to insist on and not resist the progress of rationalisation in their own interest and in the larger interest of the country.

38. The pace of development as well as the volume of employment rests to a considerable extent on the capacity to export in the face of increasing competition. This can be achieved primarily through higher productivity and a measure of sacrifice by the employer, the worker and the rest of the community:

39. Vital reforms cannot be secured without the cooperation and goodwill of the workers. They can be brought about by creating a proper understanding and the provision of the necessary safeguards in the interests of the workers. The greatest anxiety experienced by the workers is with regard to the stability of employment. The agreement

regarding rationalisation at the national level guarantees to the workers security in their existing jobs. The scope for rationalisation can be considerably extended if effective arrangements are made for retraining and transfer to other jobs on the basis of the workers' consent. The workers can be expected to respond. A favourable environment for this should be created. This process will be helped greatly by the agreement reached at a seminar organised by the National Productivity Council, which provides an initial basis for cooperation for higher productivity. The formulation of the Code of Efficiency and Welfare will now be taken up for consideration by the Indian Labour Conference. Greater attention will also have to be given to the training of management at various levels in the important aspects of employer-employee relations. Systematic studies will have to be undertaken for determining the individual wage differentials and the manner in which wages should be linked to productivity. In this connection, the work of the Training-Within-Industry Centre in introducing T.W.I. and other techniques for improving the managerial and supervisory skills and that of the Productivity Centre in training in the higher productivity techniques and in carrying out field investigations like job evaluation and work load studies have helped in stimulating the interest of both management and workers. Further development in this field can be of considerable assistance in evolving rational wage policies.

#### RESEARCH

40. Government undertakes special programmes of studies and surveys of aspects such as working and living conditions, family budgets, wage census, index of earnings, patterns of absenteeism, productivity, etc. There will be further extension of this activity during the period of the Third Five Year Plan.

41. The inadequacy of reliable data on labour matters available at present and the need for sustained and objective research on a systematic basis were discussed at a Conference on Labour Research held in September, 1960. It was agreed that, to begin with, a small Central Committee for coordinating labour research, comprising representatives of Government, employers' and workers' organisations, universities and institutions interested in the subject may be constituted. It should be the function of this body to make a survey of the existing agencies in the field and their physical resources, identify the gaps, explore possibilities of filling up the same, determine priorities, allocate research schemes to the various agencies in order to avoid overlapping, stimulate research work in the labour field and recommend means of utilising the results of such research. It is intended to provide for research in labour matters some new institutional facilities outside the set-up of the Government. It will have the association and assistance of organisations of workers and employers as well as others.

## CHAPTER XVI

### ORGANISATION OF PUBLIC ENTERPRISES

THE Industrial Policy Resolution of April, 1956, recognising the need of rapid industrialisation for promoting the accelerated growth of the economy, emphasised the key role of the public sector in setting up new industrial undertakings in the following words:

"The adoption of the socialist pattern of society as a national objective, as well as the need for planned and rapid development, required that all industries of basic and strategic importance, or in the nature of public utility services, should be in the public sector. Other industries which are essential and require investment on a scale which only the State, in present circumstances, could provide, have also to be in the public sector."

2. A number of basic industries which require large investments and extensive collaboration with foreign firms or governments and which could be undertaken only on the assurance of future prospects, with no immediate gain in sight, would not normally be started if reliance was to be placed entirely on private enterprise. As the need for establishing these industries is urgent and insistent in the present phase of the country's development, it is inevitable that the scope of the public sector should be large. Moreover, in the case of industries where for technological reasons, the plants have to be large, requiring big investments, by organising them in the public sector, undue concentration of economic and industrial power in private hands can be prevented.

3. Rapid expansion of the public sector would materially contribute to increasing public savings for investment, making it possible thereby to increase the rate of growth. The particular advantage of the expansion of the public sector from this point of view is that a possible conflict between efficiency and the distribution of income is, to a large extent, eliminated. Increased profits, which in the private sector would create inequalities (and possible conspicuous and wasteful consumption), in the public sector can be directly used for capital accumulation. By efficient conduct of enterprises and following a rational and economically sound price policy for its products and services, the public sector undertakings ought to secure adequate return on capital employed and contribute their full share to the increase in the portion of national resources devoted to investment.

4. As a direct consequence of the objective of working towards the realisation of a socialist pattern of society, there will be large expansion of the public sector in a wide range of activities, covering fields as varied as mining and manufacturing, generation and distribution of electric power, construction, transport and communications, irrigation, banking and insurance, trade, social services, etc. Extended operations in all these fields will call for the development of appropriate organisations and, as experience is gained in their working, it will be possible to make them progressively more efficient and effective. Although the discussion in this Chapter is primarily with reference to industrial undertakings, most of the considerations have applicability to a wider field.

5. During the last few years a number of major industrial undertakings have been established in the public sector. Several more are due to come in existence in the course of the Third Plan. Indeed, an increasingly large number of new enterprises will be established during each subsequent Plan period. So far, however, the main thought has been on initiating new projects and finding financial resources for them. It was getting things started which counted. The time has now come to give close attention to the question of how best to manage these enterprises so that they become efficient producers, capable of yielding substantial surpluses which will provide for future expansion, and set an example of careful planning, good management and cordial worker and management relationship.

6. As soon as a new project has been established, in fact much earlier, it is of utmost importance to give proper attention to its effective management. No matter how well the project has been conceived and the plant engineered, it will ultimately succeed or fail on the strength of its management. Before attempting an analysis of certain shortcomings of management and seeking to identify areas calling for remedial action, the present position regarding the organisation of public enterprises in the manufacturing field may be briefly described.

7. Public enterprises in the manufacturing field have been organised in three forms. Some of them like the Chittaranjan Locomotive Works are administered departmentally; there are a few which are corporations constituted by a statute; but the majority are joint stock companies established under the Companies Act, although sometimes designated as corporations. The important enterprises of the Centre have been listed in the Annexure which shows under each administrative Ministry, the name of the enterprise, the year of its establishment and its legal status.

8. The usual practice till recently was to establish each manufacturing unit as an independent company. Where it was felt that some special coordination was necessary between certain enterprises either because they were in the same field of operation or because they had special

commercial or technical relations with each other, it was sought to be achieved by having a number of common Directors. Moreover, in the case of enterprises under the same Ministry, there was little difficulty of coordination because even the Chairman of the Board and some of the Directors were the same on account of the fact that directorships in many cases were held by certain officials ex-officio.

9. It has now been recognised that proliferation of special organisations of such number and variety as to be unmanageable should be avoided and there should be a definite policy of consolidating these organisations so as to bring together enterprises functioning broadly in the same field. This would enable provision of common facilities to individual units, which otherwise might be well beyond their means, and lead to overall economy and efficiency. For example, a number of enterprises grouped together and working in the same field and pooling their resources can maintain an organisation of adequate size both for purchase and sale, with a net-work of branch offices on a large enough scale; can set up facilities for scientific and technological research; establish design and development organisation; undertake technical training programmes and institute suitable systems of personnel selection and recruitment on a common basis. Also as enterprises in the group will be largely concerned with the same type of problems, interchange of experience will be very profitable with a view to arriving at common solutions. Bringing together of several manufacturing units under the same company in this manner should not, however, lead to excessive centralisation on the part of the Board of Directors or intervention in the day-to-day activities of the individual constituent production units; otherwise, the General Manager of the undertaking will not have the necessary authority and initiative to ensure the smooth and efficient conduct of the enterprise.

10. The awareness of these possibilities is reflected in the recent tendency to form large companies such as the Hindustan Steel Limited, the Heavy Engineering Corporation, the Heavy Electricals Limited, the Hindustan Insecticides Limited, the Fertiliser Corporation, the National Coal Development Corporation, etc., each of which controls, or is intended to control, a number of separate undertakings in steel, machine building, chemicals, fertilisers, coal mining, etc.

11. Till some years ago, in the earlier stages, projects were handled departmentally. Later, a decision was taken that government enterprises of a commercial nature should be organised as companies. At present in the case of most of the new projects, such as the Heavy Machinery Project at Ranchi, a company is formed to see the project through from the very outset, including the stage of construction. Also existing companies are being encouraged to establish new units in their field as illustrated

by Hindustan Steel Limited being assigned the responsibility of establishing the Alloy and Tool Steels Plant at Durgapur and the new integrated steel works at Bokaro, and the Hindustan Machine Tools Company being charged with the responsibility of bringing into existence one or more machine tool factories.

12. It has become necessary now to give serious thought to the establishment of specialised agencies for designing and construction. These agencies would be able to undertake large works in connection with industrial development and to gain and preserve valuable experience of actual construction which could be put to use in the construction of similar succeeding projects. A start has been made with the establishment of design and construction organisations in Hindustan Steel Limited and Sindri Fertilisers Limited.

13. The successful operation of large industrial enterprises is a relatively new challenge. Efficient conduct of industrial and business enterprises requires that operational decisions should be prompt. They need not always be right for most such decisions are reversible and can be corrected later. Far greater delegation of authority and flexibility of operation is necessary to enable the management of the enterprise to produce results. If an enterprise does not have real autonomy it is not likely to be effective.

14. Lack of delegation within the enterprise is another common failure. Even as the general manager does not enjoy sufficient authority to manage effectively, there is often a failure by him and other management staff in the hierarchy to delegate authority to others down the line, who cannot do their jobs properly without the necessary authority. The lack of delegation of authority is usually accompanied by a failure to define responsibilities and duties. Nobody can operate confidently or effectively or be held responsible for results unless he knows what he is supposed to do and has the authority to do it.

15. Another important factor which determines the success of an enterprise is whether there are enough experienced men in positions of management. A good plant can appear to operate, and in fact can operate in an uneconomic way, without enough management staff, but if their number is not sufficient, an enterprise will be handicapped by high production cost, low output, high wastage, mechanical and processing difficulties and break-downs.

16. Lack of quality of managerial personnel is another factor prejudicing the success of an enterprise. Besides, there being too few experienced persons in managerial posts, often the key positions as general managers, production managers, maintenance superintendents, etc., are held by people who do not have the requisite training and experience to do their jobs effectively.

17. The consciousness of profit and cost is also not as widespread as is necessary. The purpose of management should be to secure economic efficiency; cost consciousness is necessary to achieve the desired results. But even the most cost-conscious manager cannot control costs unless he knows what they are, and this is not feasible without the use of cost accounting and other management techniques which are not being used very widely. There are deficiencies also in selection of personnel, their training, and in securing maximum work from them while giving them maximum satisfaction.

18. Some important aspects, calling for suitable action, are discussed below:

*Public accountability.*—Democratic control of publicly owned industries is very important. At the same time it is generally agreed that a public enterprise, if it is to be run successfully, must possess a sufficient degree of autonomy from Government and Parliament. When day-to-day decisions of a public enterprise become the subject of parliamentary interpellations and discussions, the Ministers will find it necessary to ask for advance knowledge and approval of all decisions. Moreover, exposed to constant public scrutiny, the management will be afraid of making the day-to-day decisions necessary in commercial undertakings, and an ostensibly autonomous enterprise will be virtually stifled by red tape and bureaucracy. The need has, therefore, been felt for a Committee of Parliament which would enable informed parliamentary criticism to be brought to bear on public enterprises. This Committee would keep itself continuously informed regarding the working of public enterprises. It may be useful if membership of the Committee is for a period of about three years so as to give time to members to master complex facts and to ensure some continuity. This will also result in a growing number of members of Parliament taking a specialised interest in these matters. As Parliament would be assured of necessary vigilance by the Committee, individual members would count on the judgment of the members of the Committee for proper and periodic evaluation of the public enterprises.

19. *Nature and functions of the Board of Directors.*—The main function of the Board should be to lay down the broad policies and the general objectives of the undertakings. Subject to the policies laid down, the Managing Director or the General Manager should have full authority and he should be held responsible for achieving the necessary results. Secretaries to the Ministries should not be appointed as Chairmen or Directors. It may, however, be useful, in the initial stages, to appoint one or two directors from amongst government officials who are actually dealing with the project in the administrative Ministry concerned and in the Finance Ministry. They will function like any other Director within the constitution of the Company and will be

bound by its rules and regulations. In respect of subjects reserved for the Government, they will be able to explain to the Board of Directors the thinking within the Government and, when matters are referred to Government, they will be able to explain the views of the Board of Directors.

20. The Managing Director and/or Chairman should be appointed by the Government and, except in the case of very small concerns, should be full-time. Other Directors may be full-time or part-time according to the requirements of the undertaking.

21. Membership of the Board should be on the basis of ability, experience and administrative competence, and should be open not only to the employees of the public undertakings but also to persons from outside. Having been selected to serve on the Board, all Directors must identify themselves with the interest of the undertaking.

22. The Board of Directors should have adequate powers to make appointments and to fix salaries. However, to avoid the risk of migration of personnel from one public sector undertaking to another if different scales of pay are adopted by them for posts of similar nature, it may be necessary to indicate to the Board broadly the basic scales of pay for different categories of posts. It should, however, be open to the Board to fix specific pays for specific jobs.

23. The powers of the Board for sanctioning of capital works will have to be considerably enhanced as the limits stipulated in the case of some of the big undertakings appear to be too low at present. The financial limits will have to be comparatively high in the case of big undertakings and could be more modest in the case of smaller undertakings. The reference to the Government for expenditure sanction should be reduced to the minimum so that within the frame-work of certain rules and limits, the Board of Directors should be free to proceed with the operations of the plant or the execution of a project.

24. Of late, there has been an attempt to form large companies under which are brought together separate undertakings of allied character. The constitution of such large companies has been considered desirable from the point of view of providing certain common facilities to individual units in the interest of overall economy and efficiency. The wider delegation of power from the Ministry to the Company should be accompanied by sufficient delegation of authority by the Company to the General Managers of the individual undertakings. The defects of excessive centralisation would remain and the operation of individual undertakings would be adversely affected if the requisite authority and autonomy are withheld from the men on the spot who have to run the undertaking.



25. *Managing Director/General Manager.*—The leadership, guidance and the main driving force must come from the Managing Director/General Manager. He must be selected on the basis of technical competence, administrative ability and quality of leadership. He must be able to see clearly what is going on and to know which department is not working satisfactorily and must have the requisite knowledge and authority to help the departmental managers to put it right. He must enjoy real autonomy within the frame work of general rules laid down and must be held responsible for the results. Day-to-day decisions should be his concern. It must be recognised that some mistakes will occur, for these are inevitable when decisions have to be taken quickly in the interest of efficiency. The flexibility of operations will be possible only if he enjoys a reasonable degree of freedom from being called upon to explain to a number of different people at different times why certain decisions were taken and why departures had to be made from particular rules. For the proper discharge of his responsibilities, the General Manager should remain in charge of an undertaking for a reasonably long period so that he has an intimate knowledge of the problems and possibilities of his enterprise. Quick changes of appointments must, therefore, be avoided. At the same time, his security of tenure should depend on performance. If he succeeds, he will naturally be continued in office and receive encouragement; if he fails he must expect to be superseded.

26. *The role of Financial Adviser.*—All companies should be provided with an internal Financial Adviser who should function subject to the authority of the General Manager. In case of difference of opinion, it should be quite open to the General Manager to overrule the advice of the Financial Adviser, but there should be a convention that such cases should be brought to the notice of the Board by the General Manager at the next Board meeting.

27. The Financial Adviser should concern himself with problems of financial management rather than devote exclusive attention to those of control of expenditure. For this purpose it would be necessary to arrange for orientation of Financial Advisers in the principles and practices of financial management either before joining an undertaking or through refresher courses. This is required particularly for Financial Advisers who may be drawn from the usual channels available for this purpose at present.

28. *Supporting management.*—The General Manager should have enough supporting management staff to provide adequate control, supervision, direction and training for all employees. This staff should be selected and appointed by the General Manager, subject to Board approval, and should be responsible only to him or to some one authorised

by him. He should delegate and define adequate authority to them and then hold them responsible for performance.

29. *Building up of management cadres.*—The efficient functioning of the enterprises will depend greatly on two important factors bearing on personnel management, namely training for positions of responsibility in the organisation and development of personnel to serve as second line for eventual selection to key appointments. Managerial personnel for key appointments should not only be technically qualified but they should also develop an "all plant" outlook. The manner in which this should be done will depend on the particular circumstances of each enterprise, which may use specially devised courses and other practical ways such as giving opportunities to selected persons for proving their managerial capacity in suitable posts.

30. *Advance planning.*—Planning, that is deciding in advance what is to be done, is a precondition for the success of an enterprise. It provides the basis for organisation, assembling resources, direction and control. An able manager is one who can say with an assurance based on detailed planning what products he would produce during the next month and the year, how many men and of what qualifications he would need and what would be the expense thereof, which materials and in what quantities would be required, what the spoilage would be and can state in similar specific terms the results he plans to achieve in other phases of his operation.

31. The plans for a given enterprise should fall into a hierarchy. A general objective is accompanied by a whole series of successively more detailed plans, each designed to implement the general plan of which it is a part. There have to be similarly general plans for longer periods, say five years, annual operational plans and budgets and detailed day-to-day programmes of individual departments.

32. The preparation of advance costs, operation and capital budgets will greatly reduce the need for making references to the administrative Ministry and strengthen the autonomy and flexibility of the enterprises. All enterprises, in their own interest, should, therefore, build suitable machinery for this purpose.

33. Advance planning provides an opportunity for seeing that each part fits in with the other and is directed towards the overall purpose. When bottlenecks or weak spots are uncovered by careful and realistic advance planning, there is often time to find a remedy before the event occurs, whereas expensive breakdowns may be unavoidable if corrective action is not initiated until overwhelmed by a crisis. Moreover, trouble is often more easily corrected in its early stages than after a crisis has developed. Thus, for example, preventive maintenance systematically

carried out avoids expensive repairs and replacements and shutting down of plants later. The existence of a detailed plan provides the impetus for developing more efficient methods and procedures and also facilitates delegation of authority.

34. Setting up of specific goals and subgoals is an inseparable part of the whole planning process. A wide variety of operating standards and 'norms' need to be set up to express the anticipated results of the more detailed plan. These may include norms for use of raw materials; power and fuel; inputs of labour; overhead expenses; targets of output, both in terms of quantity and quality; tasks for training, etc. Comparable data from other similar plants in the country and outside are often found of value in this connection. An operational budget of the enterprise, carefully prepared from this point of view, could serve as the goal towards which all activities are directed. Many benefits follow from such practice. It makes purposeful and integrated planning easier; it helps the executive and the operators to concentrate on the essentials and contribute to the constant vigilance that is necessary to keep the enterprise from unproductive activities; the accumulation of operational data and norms useful for planning provides the basis for building realistic programmes in future; and, most important of all, the setting up of specific goals and norms is an essential condition for administrative control, that is, the securing of results in accordance with plans. Standards and norms are vital if appraisal is to have any validity. Also the recognition and acceptance of specific and clearly defined objectives and standards play an important part in the motivation of individual effort.

35. *Incentives.*—An enterprise which has worked realistic 'norms' of performance would find it easy to introduce systems of wage incentives, which play an important part in raising labour productivity, reducing costs and improving quality. These systems fall into three broad categories: (1) wages regulated on piece work, (2) a basic wage for an agreed output to which is added a bonus proportionate to additional output, and (3) a bonus payable on the output of a group, each member of which draws a separate basic wage. The applicability of any system depends to a large extent on the specific situation of an enterprise and has to be worked out in relation to its requirements. All that can be said is that incentive wage system should be introduced on the largest possible scale for the mutual benefit of the workers and the industry.

36. *Research departments.*—It is necessary to maintain adequately staffed Research and Development Departments in the public undertakings which should constantly endeavour to improve the product quality and operational and technical efficiency through scientific studies. The recommendations of such departments should be implemented speedily. Innovations and new ideas should be suitably rewarded and publicised.

There should be frequent exchange of technical and managerial experience between different public enterprises so that all benefit from the common pool of experience. Inter-plant visits will be useful in this connection.

37. *Personnel relations.*—The enterprises of the public sector have a special obligation to follow labour policies which are conducive to securing and keeping a competent working force at a reasonable cost. This requires a suitable wage policy with incentives, careful selection of personnel, organised training to improve the skills of workers at all levels, opportunities for workers to attain higher positions as their ability improves, active encouragement of workers to make suggestions to improve the operations of the enterprise and recognition of useful ideas by suitable rewards, a grievance procedure to settle small problems before they become large, and generally an attitude towards the workers which will encourage added effort and initiative and give the employees satisfaction, a sense of participation and feeling of loyalty to the enterprise and pride for its achievement.

38. *Surpluses and their utilisation.*—When public enterprises run efficiently and follow a proper price policy for their goods and services, the results of their operations must be reflected in larger earnings and surpluses. In a developing economy, these constitute a ready and increasingly important source for financing investment either for the expansion of the enterprises which yield these surpluses or elsewhere in the economy. It is, therefore, incumbent on public enterprises to produce efficiently and to accumulate surpluses which should be earmarked for further development.

39. It is not enough for an enterprise to operate efficiently and carry out its assigned task satisfactorily. It must assume responsibility for continuously improving its performance and for initiating and planning its growth and expansion. The management of a public enterprise should not merely carry out plans approved by Government, but must in fact be closely concerned with and be largely responsible for preparing the plans for further development and for securing the requisite resources.

40. A brief review like the one attempted here must of necessity leave many gaps. It is not the purpose to prescribe detailed operational recommendations for each enterprise but to touch upon some significant aspects to which greater attention needs to be given. Many of the enterprises in the public sector have already adopted policies and management techniques which have enabled them to produce remarkable results in relatively short time. The record of public enterprises, considering their relatively recent origin, is very creditable. The deficiencies of management to which attention has been drawn are as characteristic of enterprises in the private sector as in the public sector. Striving for constant improvement must be a common goal for all.

## ANNEXURE

List of major public enterprises of the Centre in the field of  
manufacturing and mining

[With authorised capital of Rs. 5 million and above]

Ministry/Enterprise	year of establish- ment
<i>Commerce and Industry</i>	
1 Indian Drugs and Pharmaceuticals Ltd. . . . .	1961
2 Heavy Electricals Ltd. . . . .	1956
3 Heavy Engineering Corporation Ltd. . . . .	1958
4 Hindustan Antibiotics Ltd. . . . .	1954
5 Hindustan Cables Ltd. . . . .	1952
6 Hindustan Insecticides Ltd. . . . .	1954
7 Hindustan Machine Tools Ltd. . . . .	1953
8 Hindustan Organic Chemicals Ltd. . . . .	1960
9 Hindustan Salt Company Ltd. . . . .	1958
10 Nahan Foundry Ltd. . . . .	1952
11 Hindustan Chemicals and Fertilisers Ltd. . . . .	1956
12 National Instruments Ltd. . . . .	1957
13 National Newsprint and Paper Mills Ltd. . . . .	1947
14 Sindri Fertilisers and Chemicals Ltd. . . . .	1951
15 Praga Tools Corporation Ltd. . . . .	1943
16 Hindustan Photo Films Manufacturing Company Ltd. . . . .	1960
<i>Defence</i>	
17 Bharat Electronics Ltd. . . . .	1954
18 Prototype Machine Tool Factory* . . . . .	1953
19 Hindustan Aircraft Ltd. . . . .	1940
<i>Department of Atomic Energy</i>	
20 Indian Rare Earths Ltd. . . . .	1950
<i>Finance</i>	
21 Silver Refinery, Calcutta* . . . . .	1952
<i>Railways</i>	
22 Chittaranjan Locomotive Works* . . . . .	1948
23 Integral Coach Factory* . . . . .	1952

Ministry/Enterprise	year of establish- ment
<i>Steel, Mines and Fuel</i>	
24 Hindustan Steel Ltd. . . . .	1953
25 Indian Refineries Ltd. . . . .	1958
26 National Coal Development Corporation Ltd. . . . .	1956
27 National Mineral Development Corporation Ltd. . . . .	1958
28 Neyveli Lignite Corporation Ltd. . . . .	1956
29 Singareni Collieries Company Ltd. . . . .	1920
30 Oil and Natural Gas Commission** . . . . .	1956
<i>Transport and Communications</i>	
31 Indian Telephone Industries Ltd. . . . .	1948
32 Hindustan Shipyard Ltd. . . . .	1952
33 Hindustan Teleprinters Ltd. . . . .	1960
<i>Works, Housing and Supply</i>	
34 Hindustan Housing Factory Ltd. . . . .	1953

\*Departmental undertaking.    \*\* Statutory corporation.

All others are companies registered under the Companies Act.

## CHAPTER XVII

### ADMINISTRATION AND PLAN IMPLEMENTATION

#### I

##### ADMINISTRATIVE TASKS

THE Third Five Year Plan envisages a scale of national effort far exceeding that of the preceding decade. A statement of its objectives and targets can scarcely convey the scope and range of the tasks which the nation has undertaken to fulfil during the next five years. In the last analysis the Plan rests on the belief that the requisite effort will be forthcoming and that, at each level in the national life, within the limits of human endeavour, an attempt will be made to implement it with the utmost efficiency. Of the many assumptions on which a Five Year Plan is based, this is not only the most important but also the most difficult. The economic goals of the Plan are vital in themselves and are at the same time a foundation for future growth; yet, they are but one aspect of the challenge implicit in the Plan. There is, for instance, the expectation that, given reasonable conditions, it will be possible to mobilise savings for implementing the entire physical programme accepted for the Third Plan period and more. Against the background of a rate of growth of population of well over two per cent per annum, to expect to provide work at least to the entire addition to the labour force implies not only efficient implementation of all programmes but also intensive and nation-wide use of the available manpower resources. The realisation of the principal social objectives of the Plan, especially equal opportunity for all citizens, the provision of basic necessities, reduction in disparities of income and wealth and the more even distribution of economic power depends on the execution of a wide range of policies and programmes.

2. The Plan has to be implemented at many levels—national, State, district, block and village. At each level, in relation to the tasks assigned, there has to be cooperation between different agencies and an understanding of the purposes of the Plan and the means through which they are to be secured. In a vast and varied structure organised on a federal basis, a great deal depends on being able to communicate effectively between different levels, and at the same level between different agencies. In many vital sectors of the Plan, responsibility for execution lies with authorities in charge of large projects. The role of such projects grows as the economy develops and in consequence many

new problems of organisation have to be solved. In a developing economy the functioning, side by side, of an expanding public sector and a private sector, which is in part organised and in large part unorganised, also raises difficult administrative problems.

3. The past decade has been a period of considerable change and adaptation in the field of administration. Innovations have been introduced and new institutions established, although perhaps many of them have yet to be fully integrated with one another and with the structure as a whole. With increase in the range of Government's responsibilities and in the tempo of development, the volume and complexity of administrative work have also grown. The administrative machinery has been strained and, at many points in the structure, the available personnel are not adequate in quality and numbers. The administrative burden of carrying out plans of development, large as it is at present, will increase manifold under the Third Five Year Plan, and doubtless new problems in public relations will also come up. In the recent past, certain aspects of administration have attracted pointed attention. These include the slow pace of execution in many fields, problems involved in the planning, construction and operation of large projects, especially increase in costs and non-adherence to time schedules, difficulties in training men on a large enough scale and securing personnel with the requisite calibre and experience, achieving coordination in detail in related sectors of the economy and, above all, enlisting widespread support and cooperation from the community as a whole. In the larger setting of the Third Plan, these problems are accentuated and gain greater urgency. It is widely realised that the benefits that may accrue from the Third Plan will depend, in particular in its early stages, upon the manner in which these problems are resolved. As large burdens are thrown on the administrative structure, it grows in size; as its size increases, it becomes slower in its functioning. Delays occur and affect operations at every stage and the expected outputs are further deferred. New tasks become difficult to accomplish if the management of those in hand is open to just criticism. In these circumstances, there is need for far-reaching changes in procedures and approach and for re-examination of prevalent methods and attitudes.

## II

### EFFICIENCY AND STANDARDS IN ADMINISTRATION

4. Each area of development administration has its own specific problems. There are, however, some common directions of reform which are applicable to all branches of administration and deserve emphasis in view of the experience gained in the Second Plan. The primary aim must be to ensure high standards of integrity, efficiency and speed



in implementation. The process of improving administrative efficiency is a continuous one and progressively, through work studies, and improved systems of office administration and in other ways, better methods have to be devised. Already, both at the Centre and in the States, greater attention is being given to organisation and methods, to increasing incentives, and to the evaluation of performance. To an extent speed in implementation and efficiency in individual processes are interrelated. In the context of development, however, the former presents perhaps the more difficult issues in organisation, especially where the structure becomes large and complex and responsibility is widely shared. There are some common features in the way in which this problem arises at the national and at the State level, but, on account of differences in the relative size of the operations undertaken, there are distinct differences in degree. From such study and thought as has been given to this subject, some of the main directions in which action should be taken to speed up implementation are described below. It is recognised, of course, that while changes in organisation and procedures can go some distance to remove causes of delay and to achieve greater speed, they have to be supported by greater attention to the training of personnel, to supervision and to reporting and evaluation. Nevertheless, without a concerted attempt to make the administration much more action-oriented than at present, these measures may not yield enough results.

5. For the execution of any programme or project, the primary need is to fix specific responsibility on the agency concerned and, within it, on particular individuals. Within defined limits, each individual should be given full responsibility and, with it, the necessary measure of support and trust. If he fails in the discharge of his responsibility, he should be replaced. But so long as he holds the office with which he is entrusted, he should accept all its obligations, and, equally, he should be placed in a position effectively to discharge them. With responsibility thus specified, it should be open to him to seek such advice and consultation as he may require, but these should not become the necessary ingredients of the executive process itself. In the present functioning of the administration, consultation with other authorities is not always confined to broader matters; instead, it is too frequent and too concerned with details and, therefore, impedes effective action. Exercise of financial control is one important aspect of this problem. Obviously, the question here is one of ensuring wide delegations of financial powers to the heads of administrative Departments, with Finance Department undertaking their principal scrutiny prior to the framing of the annual budget.

6. As was pointed out both in the First and in the Second Plan, Central Ministries and perhaps Secretariat Departments in the States have tended to assume responsibility for an increasing amount of original work. This

has reduced the initiative of the executive Departments and their ability to function on their own. The main preoccupation of Ministries and Secretariat Departments should be with matters of policy, general supervision and enforcement of standards, and executive tasks should be left to be carried out by Departments and authorities specially designated for the purpose.

7. A necessary condition of placing specific responsibility and providing the means for fulfilling it is that success or failure should be judged by the test of results. This is possible only if in the planning stage care is taken to specify the tasks to be undertaken, the means to be employed, the obligations of the various agencies or individuals concerned, and the time sequence in which different operations must flow and dovetail into one another. These conditions apply to several branches of administration and, more especially, to large projects.

8. By its very nature, a plan of development necessarily involves the setting of targets and subsequent appraisal of fulfilment. Targets may provide useful indicators of progress, and may make for concentrated effort, but equally important are the specific measures and policies needed to realise them and their sustained implementation. There are fields in which targets in the sense of final figures of output or capacity are on the whole better avoided, either because of faulty methods of estimation or because the concepts are defective. However, where a target is meaningful, it should be worked out by the agency responsible for it after careful study and should be further broken down into smaller units in terms of time schedules and responsibility for execution. Five year targets should also be reassessed each year in the light of experience, and a further view taken regarding the likely future trends.

9. Attention has been sometimes drawn to the fact that in the present system of administration, incentives are not given an adequate role. It is obvious that incentives, whether for individuals or for groups, help to build morale. A pre-requisite for a scheme of incentives is the ability to work out performance standards in an effective manner. The directions in which, within any specific area, an incentive scheme is likely to prove beneficial would need to be studied. For instance, in industrial undertakings, in the present circumstances, incentive schemes might assist greatly if they were directed to objects such as the following:

- (a) reduction in construction costs,
- (b) reduction in foreign exchange,
- (c) improvement in methods of maintenance,

- (d) use of substitutes and by-products, and
- (e) simplification of work procedures.

Material incentives are of course important; with these there should also be increasing scope for the development of non-material incentives, especially various forms of appreciation and recognition of worth, a sense of partnership in a common endeavour, and human relationships based on mutual respect and friendliness.

### III

#### PROJECTS IN THE PUBLIC SECTOR

10. The public sector already includes an extensive range of enterprises such as industrial undertakings, irrigation and power projects, railways, road transport, air transport, shipping and others. Some of the main problems of organisation of industrial enterprises have been reviewed in the preceding Chapter. Experience gained during the Second Plan has suggested certain lines of action which should help increase the speed and efficiency of implementation of projects and secure greater economies in their construction and operation.

11. Large projects take considerable time to yield results, and their planning requires careful preparation. They have to be conceived in terms longer than the usual Plan periods. They must, therefore, form part of a scheme of development stretching over a longer period, say, 10 to 15 years. In the course of the preparation of the Third Plan, although to a smaller extent than in the Second, it was observed that many of the projects proposed for inclusion were not worked out fully, nor were they presented adequately. For a considerable number of projects included in the Third Plan, the information available even at this stage leaves much to be desired. This deficiency arises in part from lack of the requisite technical personnel in several fields, but is due also to the absence of adequate arrangements for undertaking detailed studies well in advance of the time for their consideration and approval. It is, therefore, important that both at the Centre and in the States, work on the preparation of projects included in the Third Plan should be completed with the utmost speed. Further, project studies relating to the Fourth Five Year Plan should be taken in hand, so that they are substantially completed in the course of the next three years.

12. In the field of industrial and mineral development, unlike the more familiar fields of irrigation and power and transport, the existing technical organisations are not always adequate. To the extent to which this may be due to lack of experienced personnel, for some years at any

rate, there should be readiness to associate selected experts from abroad. It is suggested that the Central Ministries concerned with industrial development should take early steps to organise well-equipped technical planning cells. These should be maintained as permanent nuclei and should be supplemented by additional personnel according to the requirements of projects which are to be studied. The Ministries might also consider maintaining panels of technical advisers for selected industries. In this way the growing technical knowledge and experience of management and planning available within the country itself could be utilised in an organised manner in developing industry and specially the public sector. As suggested in the preceding Chapter, major State undertakings should take steps to strengthen and, where necessary, to set up suitable design and research units. Wherever feasible, the preparation of new projects should be one of their primary responsibilities. This would enable technical planning cells in the Ministries to concentrate on the broader technical and economic aspects of the projects with which they are concerned and on the study of different stages of execution and of the various related steps which require coordination at the level of policy and administration.

13. In connection with large projects, the question of the adequacy of existing arrangements for examination of cost estimates has arisen from time to time. A small beginning has been made with the setting up of a 'projects coordination cell' in the Ministry of Commerce and Industry, but the task has to be conceived on a much larger scale, and the arrangements needed should receive further consideration. Besides scrutiny of cost estimates and examination of economic aspects of projects, it is necessary that each year the Ministry of Finance should be in a position to present a report appraising the financial and economic aspects of all industrial undertakings of the Central Government.

14. Long gestation periods are a feature common to large projects. During the Second Plan, the gestation periods have in fact been much longer than had been estimated earlier. There are several reasons why continuous efforts should be made to reduce the time lags to the minimum. Large projects make a considerable claim on the available physical resources. It is important that there should be continuous flow of benefits from projects under execution at each stage in the Plan. The problem is essentially one of phasing work on each project with strict regard to the requirements and the provision of materials and of the ancillary services, including power and transport. There has to be a high degree of coordination between different stages or parts of the same project as well as in related sectors. Coordination is required both at the operational level and in the planning of parallel or complementary investments.

15. Management of projects is a relatively new and important part of administrative practice, of which the special features are that definite targets and time schedules have to be fulfilled, costs have to be reckoned strictly at each stage, a great deal of initiative and resourcefulness in execution are called for, and there must be adequate organisation for technical planning. Without advance planning and accurate estimate of costs, the success of a project cannot be assured. It is also essential that programming techniques should be improved continuously so as to secure at each stage the maximum benefits from the outlays incurred and to achieve the targets within the budgeted time and resources.

16. In large projects under the same overall management, there is need for special units to assist the management in keeping down costs, raising productivity, setting norms and checking performance. This will ensure that the physical assets created and the results achieved are commensurate with the investments made, the original estimates are not exceeded without sufficient reason, time schedules are maintained, and the responsible authorities are in a position to enforce efficiency, economy and integrity. It is suggested, therefore, that the Central Ministries as well as States concerned with large industrial and other projects should review the existing arrangements for achieving the objects mentioned above and should provide for suitable units for evaluation and review of progress which will function under the control of the top management authorities without, however, being involved in day to day operations.

17. A word may also be added here regarding certain aspects of implementation of Plan projects undertaken through private industry. The private sector has to make a large contribution to the growth of industrial production. Through the work of the National Productivity Council, Management Associations and other organisations greater attention is now being given to measures for increasing efficiency of management, reducing costs and, in general, inculcating in private enterprise the consciousness of responsibility to the community as a whole. In a planned economy in which the public and the private sectors have complementary roles, there must be equal concern in both for securing economies, utilising indigenous materials, saving on foreign exchange, outlays for maintenance of production as well as for development, accelerating exports, expanding employment, and, generally, improving the quality of service. Development Councils which have been set up for many industries and other organisations representing private industry are useful means for bringing the best leadership in each industry to bear on the solution of common problems and the achievement of high standards of management and welfare. They should be enabled to enlarge their contribution in these directions.

## IV

## PERSONNEL

18. Expansion of training facilities in various fields of development has received considerable attention since the beginning of the Second Plan. The training programmes proposed for the Third Plan are described in the Chapter on Technical Education. It may be useful here to draw attention to some aspects of the problem of developing personnel with the necessary outlook and experience which will have particular importance for the success of the Third Plan. There are certain fields in which, for many years to come, personnel at the highest level will be inadequate or experience of a specific character will not be sufficiently available. In these fields, in the interest of rapid development itself, it would be desirable for a period to arrange to supplement the available indigenous personnel.

19. In the past, there has been considerable under-estimation of the management implications of large projects as well as of programmes of development in different fields. To build up competent managers, who know their own job and have the ability to lead, is one of the key tasks in every sector of the Third Five Year Plan. For the most part, these men must be found from the middle grades of personnel within each organisation supplemented, to the extent possible, from other sources. Both within the Government and in projects, there has been greater pressure at the higher levels, and enough attention has not been given to the development of the middle grades of personnel. This object can be achieved if persons from these grades are given a greater share of responsibility in day to day work and have the opportunity of gaining experience in the higher functions of management. Along with this, within each project, it is essential to establish the practice of consultation and exchange of views as between different levels within the organisation as well as at each appropriate level.

20. Work in projects as well as in important programmes has frequently suffered because of rapid transfers of officials. For tasks of any importance, it is essential that the responsible officials should not only be selected with care and suitably trained, but should also remain long enough to grow to the full measure of their responsibility. In any major key assignment a period of less than five to ten years is rarely sufficient for producing large results. Frequently, in service transfers the factors which are taken into consideration are not of the first importance from the standpoint of public interest or the success of the undertaking. Transfers may sometimes injure both continuity of operations and the morale of organisations whose work at the present stage of development is nearly always of a difficult and pioneering character. There should be no hesitation in assuring the reasonable expectations of promotion to

persons who are required to continue on the jobs held by them in pursuance of public policy.

21. Large numbers of well-equipped public enterprises in different fields which are being developed throughout the country have facilities for arranging training on an extensive scale. In this respect, there is room for a much more positive approach than has been adopted hitherto. Wherever possible, each large project in the public sector should have a well-organised training programme for apprentices, etc. supported by institutional training at polytechnics or other appropriate centres.

## V

### ECONOMY IN CONSTRUCTION

22. In many fields of development, construction costs account for a substantial proportion of the expenditure. There is considerable scope for saving on construction costs if attention is given to certain elementary aspects. While each major construction has its own special features, there are five groups of factors which specially influence costs:

- (1) Planning, investigations including those of raw materials, designs, specifications including those for equipment, detailed estimates, and preparation of the project including phasing of its component elements for optimum results, and financial returns;
- (2) Essential preliminaries for construction like staffing, land acquisition, communications, housing, policy and procedure for procurement of plant, equipment, stores, etc.;
- (3) Choice of construction agency, whether departmental, contract, labour cooperatives, voluntary organisations, etc. and system of contract, costal contract or work order;
- (4) Contract procedures such as security deposits, earnest moneys, issue of materials, procedure for payments, interval between execution of work and payment, deviation from original specifications or scope and claims for extra items; and
- (5) In the administrative set up, delegation of powers, place of Accounts Officer vis-a-vis Chief Engineer, responsibility and the adequacy of support, trust and authority vested in the principal executive to discharge that responsibility.

With due care and supervision, it should be possible in most cases to avoid unjustified excesses over estimates of costs as well as delays in keeping to the time-schedule for completing the work.

23. The question of securing economies in construction has been considered in consultation with Central Ministries and State Governments and there is general agreement on the following measures:

- (1) Before a project is undertaken, there should be adequate planning of all aspects of the project, specially investigations, including those concerning materials for construction, and a detailed project report giving layout of works, details of equipment, phasing of component units of the project, cost estimates, financial returns, etc.;
- (2) Simultaneous steps should be taken to arrange for essential preliminaries of construction, namely, land acquisition, housing, communications, recruitment of staff and laying down procedures for procurement of plant and equipment and stores, and materials budgeting should be undertaken in detail;
- (3) Adequate workshop facilities should be provided for installing machinery and for repairs and overhaul during construction. The workshop should also provide training facilities for mechanical, electrical and other personnel required for operating construction machinery;
- (4) In planning for mechanised construction, the need for large-scale employment being an essential objective of the Plan, a careful balance must be struck between use of manual labour and machine; the use of machinery should be restricted to only those works which, if done by manual labour, would be unduly delayed or would become much more expensive, or which are impossible of execution through manual labour;
- (5) A careful assessment should be made of the spare parts required for construction machinery and other stores, and provision should be made accordingly so that, on the one hand, the work is not held up for want of essential stores and spares being available when required and, on the other, there is no unnecessary accumulation of inventories;
- (6) A central design organisation should be set up for the project if it is of sufficient magnitude or for a group of projects of smaller magnitude, which will prepare detailed designs, field plans, specifications of machinery and of civil works, including specifications for materials of construction. This organisation should also prepare designs for buildings and lay down norms regarding space utilisation;



- (7) Buildings should be planned and designed on the basis of functional needs. Cost reduction can be further secured consistently with these needs by putting up temporary or semi-permanent construction to the extent possible. With optimum space utilisation, standardisation, suitable type designs, prefabrication, adoption of improved techniques and control or elimination of items which are not essential for the functional needs of the building, considerable economies can be effected;
- (8) Choice of construction agency, system of contract and contract procedures are the most important factors, besides planning and design, which determine the ultimate cost of the project. The agency of construction can be departmental, or through contractors or voluntary organisations and labour cooperatives. In the case of non-departmental agencies, the work can be awarded on a codal contract or a work order system. A judicious choice between the agency of construction and the system of contract will bring about appreciable cost reduction. Departmental construction and construction through voluntary construction agencies and labour cooperatives will avoid unnecessary dependence on contractors and also divert the profits from the individual to the community. Voluntary organisations and labour cooperatives should be encouraged and work awarded to them on the work order system as far as possible;
- (9) Promptness in payment of running as well as final bills is one of the most important factors in cutting down costs. Monthly on-account payments should be a normal feature. Claims for extra items, unless approved in advance, should be definitely rejected;
- (10) Training of personnel for purposes of improving skills and productivity should be an integral part of the construction organisation;
- (11) In the interest of continuity and building up of expertise, transfers of essential technical personnel from construction should be avoided even though such action may militate against departmental rules or conventions, and the interests of such personnel safeguarded within the construction organisation;
- (12) A 'Cost Reduction Unit' should be established in each major construction project as a part of the construction organisation under the exclusive control of the Chief Engineer of

the project. Its functions will be to carry out work studies, continuously analyse factors affecting costs, recommend suitable adjustments from time to time in materials, techniques, procedures and organisation, evaluate the results of such adjustments and keep a watch on progress in achieving economies in construction costs;

- (13) A pool of technical advisers for each type of undertaking should be maintained at the Centre who, with the background of their experience and knowledge and the further pool of knowledge made available to them by the design and construction organisations and the cost reduction units, will advise on the technical, economic and administration aspects of the project and also serve as a clearing house of information. As far as possible expenditure on this pool should come out of the savings in cost secured through its advice; and
- (14) For each major project, a comprehensive completion report should be prepared giving the entire history of the project, including mistakes which occurred and risks taken, remedial measures adopted and lessons drawn, so that this report may serve as a reference book and guide to engineers charged with the execution of similar projects in the future. The preparation of the completion report should be begun while the works are in progress, and events fresh in memory and the report completed, as far as possible, simultaneously with or soon after the completion of the project. Technical bulletins dealing with various aspects of design and construction should also be prepared at the same time.

24. It has been suggested to States that they might set up inter-departmental committees to watch progress in achieving economies in construction costs. A number of States have already set up such committees. A committee on these lines is also being constituted at the Centre. Through the establishment of such machinery for following up the various suggestions mentioned above, it should be possible to insist that when a development programme or project comes up for general approval the construction element is also fully considered. This will further secure that construction programmes in each field are phased so as to lead to the largest measure of economy.

## VI

### IMPLICATIONS. FOR PLANNING

25. As the Second Five Year Plan progressed from year to year, it was felt that with greater anticipation and more accurate statistical and economic intelligence some of the problems might have been dealt with

differently. In the first phase of the Plan, the decline in foreign exchange reserves might have been spread over a longer period, and the consequent reductions in foreign exchange allocations might have been less drastic in relation to power development and the production of fertilisers. The considerable lags which occurred in the utilisation of irrigation from large and medium irrigation projects could have been reduced. The shortages and imbalances recently reflected in the difficulties of coal transport could have been countered in advance to a greater extent. Finally, the intensity of fluctuations and the rise in prices during the past two years might have been moderated. These are instances of the interdependence between the balance of payments and the internal price levels, of the scheme of investments and the resulting outputs, and of developments in the related sectors of industry, transport and power. They point to the much larger dimensions of the problems of management, planning and implementation which are inherent in the design, structure and phasing of the Third Five Year Plan.

26. These problems arise not only at the national level and in the sectors of modern industry, transport and power, but are also reflected in turn in the greater responsibilities thrown upon the plans of States. In many sectors the role of planning in the States is wholly complementary to that of planning at the national level, and problems at the State level also become more complex. The line of communication between planning for the country as a whole and for each district, block and village is a long one; to be able to preserve the broad national priorities while seeking to adapt the Plan in its myriad forms to the conditions and needs of each area and each community is no small objective. Against this background, a fresh view has to be taken of the ways in which the machinery and the process of planning at various levels may be improved, evaluation made more incisive, and planning equipped with better statistical and other tools. These are problems to be considered further in consultation with the Ministries at the Centre and the State Governments. Some of the principal directions in which the existing schemes and organisation of planning may be strengthened may be briefly indicated.

27. Unlike the earlier phases of planning, large projects in industry, transport, power and other fields, which involve complex technical and economic problems and vast amounts of expenditure, have now an increasingly important place in national planning. As the body entrusted with responsibility for planning at the national level, the Planning Commission will endeavour to keep in touch with the working of large industrial and other enterprises and assist Ministries and States with objective analysis and reporting from the wider considerations of the national economy as a whole. From this angle the Planning Commission's own work and that of the Committee on Plan Projects and the Programme Evaluation Organisation are being reviewed. It

will be necessary to ensure close collaboration with various statistical agencies and also to enlarge the scope of the economic and social research to be undertaken both directly and through universities and other centres of learning.

28. In collaboration with the Ministries and the States considerable improvement will need to be effected in the present system of reporting upon projects, flow of information at intervals short enough to be meaningful, and assessment of current trends. Too frequently in the past, reports on progress have lacked focus and have not brought to light current weaknesses or helped to anticipate problems requiring action at different levels.

29. Large burdens are being placed on planning organisations in the States. States are called upon to interpret national objectives, translate them in terms of the needs, resources and possibilities open to them, carry the Plan to the remotest points, and find ways of mobilising local resources and enthusiasm. Within the limits of its tasks as conceived thus far, the machinery for planning in the States has served well. It has enabled Departments to undertake the responsibilities assigned to them with coordination being provided by the Chief Minister and a Cabinet Committee and, at the official level, by the Planning Department and the State Development Commissioner.

The crucial role of State plans in fulfilling the economic and social objectives of the Third Plan has been described earlier. During the next three years States will also participate in the drawing up of a long-term plan of development for the country on the lines explained in Chapter II. This plan is intended to present the general design of development for the country as a whole over the next 15 years or so. It will be based on a study of the resources and possibilities of different parts of the country and will seek to bring them together into a common frame. This is a task of great complexity, as it is of great promise, and there will be need for close and continuous collaboration between various agencies at the Centre and in the States, especially those responsible for planning, as well as leading institutions in the country engaged in scientific, economic and social research. From this aspect as well as the implementation of the Third Plan and the preparation of the Fourth, it will be necessary for States to consider the lines along which the existing arrangements and machinery for planning at the State level should be further strengthened.

30. The introduction of democratic institutions at the district and block level and the role of Panchayats at the village level are held rightly to offer the means for mobilising the manpower and other resources of the people throughout the country. Yet, this momentous change itself places much greater responsibility upon Departments at the State level, technical and other officials at the district level and extension workers

in the blocks. The success of the Plan, as of panchayati raj itself, will depend upon a correct approach to various problems being adopted from the start both by the representatives of the people and the official agencies. The right approach to these problems is vital for fulfilling the targets of the Plan in many key sectors. This aspect is considered further in the Chapter on Community Development.

31. Finally, in the plans hitherto formulated urban areas have not been actively associated. It is envisaged that in the next phase of planning, as many towns and cities as possible and, at any rate, those with a population of 100,000 or more, should come into the scheme of planning in an organic way, each city mobilising its own resources and helping to create the conditions for a better life for its citizens. The necessary preparation for this should begin early in the Third Plan.

## CHAPTER XVIII

### PUBLIC COOPERATION AND PARTICIPATION

#### APPROACH

PUBLIC cooperation has been recognised as an essential condition for the success of our Plans. Its role and contribution have to be judged in relation to the social and economic objectives that the country is seeking to achieve. For a developing country which cherishes its democratic values, the people's part in the attainment of these objectives is of supreme importance. The peaceful struggle for freedom and the tradition of constructive work associated with it had marked out for the people a decisive role in the tasks of planned development initiated ten years ago. Shramdan, the contribution of the people to local works and amenities, and their participation in the community development movement are among the ways in which their support has been enlisted in the tasks of national development. It is evident, however, that the possibilities of full involvement of the people in the processes of change and growth are not being realised to a sufficient degree.

2. In the context of democracy, administration is effective in the measure it is based in its day-to-day working on the participation and support of the people. In the activities in which official agencies are engaged there is a large sphere in which the cooperation of the people can be sought and secured to achieve a degree of success which would otherwise not be possible. These tasks should be identified precisely and the obligations and responsibilities of the people in relation thereto made known clearly.

3. The people in the rural areas are now coming into their own. Direct responsibility for the administration of their affairs is being passed on to them as panchayati raj gets established in one State after another. The transformation now occurring at the base in the country-side, and emerging from panchayati raj, is intended to facilitate the fuller play of the energy and initiative of the people in dealing with the tasks which lie close to them in the villages of the country. Conditions are being created for a fuller use of the manpower and other resources in order to secure more rapid development in every direction. This will also widen very much the opportunities for public participation.

4. The concept of public cooperation is related, in its wider aspect, to the much larger sphere of voluntary action in which the initiative and organisational responsibility rest completely with the people and their

leaders, and does not rely on legal sanctions or the power of the State for achieving its aims. So vast are the unsatisfied needs of the people that all the investments in the public and private sectors together can, at this stage, only make a limited provision for them. Properly organised voluntary effort may go far towards augmenting the facilities available to the community for helping the weakest and the most needy to a somewhat better life. The wherewithal for this has to come from time, energy and other resources of millions of people for whom voluntary organisations can find constructive channels suited to the varying conditions in the country. Everyone can contribute something. But the greater obligation in this regard lies on those who are better placed. Applied on a mass scale, as was done in the construction of the Kosi project, the results of public participation in terms of savings of both time and money can be tremendous. Material gains to the nation from this source can be widespread and large. What has been achieved so far on this account is, however, of small proportions. There should, therefore, be an early appraisal of the activity in this field to remove hindrances in the way of a much more massive advance.

5. The transition from a state of economic and social stagnation and the initial period of advance are attended with social and political hazards, especially in the case of a country where political freedom is of recent occurrence. The new awakening brings to the fore pressing claims and expectations but the sense of duty and obligations lags behind. The development process also imposes a measure of sacrifice and forbearance. When the democratic structure and values have to be preserved, these strains and stresses become greatly accentuated. To counteract this and to create a social and political climate conducive to smooth progress must be the primary concern of a developing nation. In this field, social action has a pre-eminent role.

6. Uneven distribution of the fruits of progress, which is associated to an extent with the early stages of development in a democratic society, gives rise to a sense of deep resentment and frustration. This is greatly heightened by the spectacle of fortuitous incomes and gains from anti-social activities. Sharp conflicts, which stem from narrow sectional and regional interests, have arisen in India occasionally. It is not possible to provide full satisfaction for the rising expectations of various sections and regions at this stage. At the same time, there are forces at work which exploit all kinds of discontents and tensions, and pose a threat to the solidarity of the nation. While action has to be taken at political and administrative levels to curb these tendencies, the most effective means of combating this evil is for the community itself to strengthen its own defences and repel from within the attacks on the integrity of the nation. This protective strength can come chiefly from voluntary service and constructive activities organised by the people themselves.

Explosive situations do not develop suddenly and when outbursts occur they are only symptoms of a malaise which has existed and grown over a period of time. Remedies applied at the moment can have only a limited efficacy. Wrong influences and destructive trends have to be neutralised constantly by positive forces that should be generated within the community all the time. This is, in the first instance, a task of widespread social enlightenment. Appeals made at the last moment are usually not heeded. It is through the quiet influence of voluntary workers, steadily engaged in acts of selfless service into which a large section of the community is drawn, that the voice of reason can prevail. Constructive work and comradeship in unselfish activity are a sure basis for progressive and healthy group life in a community which is exposed to a variety of disturbing impacts. In the circumstances of our country, these facts and considerations invest social action and public cooperation with a deep significance.

#### PUBLIC COOPERATION IN THE FIRST TWO PLANS

7. The distinctive feature of public cooperation programmes is the presence of the contribution of voluntary service on a considerable scale. This became available in the earlier years chiefly for construction of roads and school buildings, drinking water schemes and other local works to provide simple amenities for the people.

8. Over the past decade voluntary contributions in the community development programmes, in cash, kind and service, have been estimated at about Rs. 100 crores. The people's quota in local development works amounted nearly to Rs. 15 crores out of a total expenditure of Rs. 33 crores. Welfare programmes of the Central Social Welfare Board and those relating to the welfare of backward classes and emergency relief schemes were implemented largely through voluntary organisations. The intensive area scheme of the Khadi and Village Industries Commission bases itself to a considerable extent on people's own effort and local resources for creating additional employment opportunities through village industries. The midday meal and school improvement schemes in Madras are being executed with a large measure of support from the people. Bhoodan and gramdan movements, in which the Sarva Seva Sangh workers are actively engaged, are an outstanding demonstration of the potentialities which reside in voluntary action stimulated by high idealism and a missionary zeal. The University Planning Forums have succeeded in drawing a large number of teachers and students with various socio-economic programmes such as small savings, literacy, slum clearance and improvement and construction schemes involving voluntary work.

9. It was realised at the time of the formulation of the First Five Year Plan that for rapid progress public cooperation will have to be



enlisted on a very large scale in every aspect of development. The Bharat Sevak Samaj was formed to provide a common platform with the object of drawing out the available unused time and energy of the people and directing them into various fields of social and economic activity. The Samaj has adopted a comprehensive programme and has branches all over the country. It has a large cadre of trained workers. Its association with the Kosi project during 1955-59 has brought forth evidence of the large possibilities of reducing cost, improving quality of performance and speeding up completion of various projects through public participation. Against the original estimates of Rs. 11.5 crores, the actual expenditure on the Kosi embankment scheme came down to Rs. 6.5 crores. The work was completed in 1958 against the target date of 1960, i.e. 2 years in advance. The Samaj has taken part on a smaller scale in the construction of several other irrigation and flood protection projects. Encouraged by its experience it has set up a Construction Service with branches in several States. It has undertaken construction of a variety of public works. The organisation of works camps for students and youth of the country in connection with the Labour and Social Service Camps scheme of the Ministry of Education has become a major activity of the Samaj in which the contribution of the people is becoming available in an increasing measure. A specific approach has now been worked out in respect of activities in the rural areas. A group of villages is selected as the field of activity of two or three trained social workers whose task it is to develop, in an integrated manner, people's programmes on the basis of a plan for the area. The Lok Karya Kshetra aims at developing new resources for the area and creating local leadership. This programme receives assistance from the State and is now being shared by other voluntary organisations. To create social awakening and disseminate information about the problems of the country and the various Plan programmes, the Samaj has set up Jan Jagran (social enlightenment) centres. This is an assisted activity which is now becoming an integral part of the Lok Karya Kshetra programme. In the urban areas, the Samaj has given special attention to the problems of the slum-dwellers and has been running a number of night shelters for the homeless.

10. There are several other organisations which are functioning at the national level and have done valuable work in attending to the specific needs or sections of the community. Considerable progress has been made in the coordination of the activities of these bodies. The National Advisory Committee on Public Cooperation makes a periodical review of the progress in the field of public cooperation and lays down lines of guidance. Among the organisations who are members of this Committee are All India Cooperative Union, All India Women's Conference, Bharat Sadhu Samaj, Bharat Scouts and Guides, Bharat Sevak Samaj, Bharatiya Adim Jati Sangh, Bharatiya Grameen Mahila Sangh,

Central Social Welfare Board, Gandhi Samarak Nidhi, Harijan Sevak Sangh, Indian Conference of Social Work, Indian Council for Child Welfare, Indian Red Cross Society, National Cadet Corps and Auxiliary Cadet Corps and Sarva Seva Sangh.

#### PRIORITIES AND PROGRAMMES

11. *Welfare*.—With so much poverty and ignorance in the country, there is no limit to the scope of voluntary service in mitigating the hardships of the under privileged and in creating a better environment for them. In view of the present limitations of personnel and resources some consideration of priorities becomes inevitable. A great deal still remains to be done to promote healthy habits and clean surroundings in rural as well as urban areas. Concerted voluntary action can produce gratifying results in this sphere without much cost. Services can be rendered to patients in hospitals and to the ailing persons who cannot be looked after in their homes. The spread of literacy can be greatly accelerated through voluntary help. To bring about social reforms and to rid the community of social evils and anti-social activities, the sanctions of law can have only a minor role, and the brunt of the challenge must be borne by voluntary organisations.

12. *Socio-economic programmes*.—The emphasis of voluntary service is now shifting from welfare, in the restricted sense, to the realisation of broader socio-economic aims. Voluntary organisations can play a very useful part in creating the climate and conditions favourable to smooth and effective functioning of panchayats and cooperatives. In rural areas, the two outstanding tasks are to assist in the fuller utilisation of the material and manpower resources so that both production and the opportunities for gainful employment may increase continuously. For this purpose, voluntary workers have to give to the community development organisations all the assistance they can.\* In towns and cities voluntary service should be directed chiefly towards improving the slums and creating better living conditions for those who must live there. Organised self-help must be the basis of this and the other activities undertaken by voluntary agencies. The cooperative movement in its many phases is a field preexcellence which can absorb services of a large number of social workers. The building up of a network of service cooperatives in rural areas and cooperative consumer stores in urban areas is an urgent national need which should receive immediate attention.

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\* Among the fields of activities for voluntary organisations suggested in a Conference, recently convened by the Ministry of Community Development, are social education, agriculture production programmes, village industries, sanitation and hygiene, local development works, welfare of weaker sections of the community, women and child welfare and youth programmes.

13. *Construction.*—Construction activity in the bigger projects as well as smaller and local works will remain the largest avenue for voluntary effort towards the utilisation of idle manpower. In villages, voluntary agencies will be encouraged and helped to take up construction work directly or through labour cooperatives. This will lead to reduction of cost, observance of satisfactory standards of work, a better deal for the construction workers and the promotion of honest dealings in the working of the construction industry. Excessive dependence on contractors will be avoided and additional resources will become available for the programmes of the voluntary organisations. A Committee set up in the Planning Commission has made the following recommendations to enable the voluntary organisations like the Bharat Sevak Samaj to undertake construction work on a large scale:

- (a) It should be the effort of the official agencies to give maximum assistance to voluntary organisations. As far as possible, a certain proportion of the available work should be set apart for them and extended as their capacity develops.
- (b) Continuous flow of work should be ensured. The project authorities should indicate well in time the magnitude, types and specific works that can be awarded to such organisations. They should be given preference over the private contractors and, where possible, given works on a negotiated basis.
- (c) Works may be awarded at workable rates on (i) 'work-order' basis; and (ii) the basis of schedule of rates increased or decreased by a percentage decided by a competent authority. The schedule of rates should be kept upto date.
- (d) Delay should be avoided and prompt payment ensured. Powers may be delegated to the Superintending and Executive Engineers and 'on account' payments may be authorised for works completed.
- (e) Technical personnel may be deputed by the State Governments and the Central Ministries to assist the voluntary organisations.
- (f) Loan assistance should be given for working capital and purchase of equipment.
- (g) Subject to proper assessment of their capacity, the voluntary organisations may be considered for all kinds of earth-work and simple masonry works. They may be given major structures if and when they are adequately equipped with technical manpower and necessary mechanical equipment. They may also be encouraged in undertaking contracts for supply of building material in bulk quantity.

14. *Better understanding of our Plans.*—For enlisting widespread participation and voluntary effort in the reconstruction of social and economic life, understanding and appreciation of the significance, objectives and priorities of the Third Plan will be of considerable help. This is by no means an easy task in view of the growing complexity of the economy and of the many problems to be faced. On the other hand, as a result of the first two Plans and the awakening to which they have led, there is much greater ability to grasp the nature of the problems, the limitations within which solutions have to be found and the need to bear larger burdens for achieving rapid economic development. In the last resort, the Plan becomes meaningful in terms of the tasks it sets and the opportunities it provides to individuals, local communities and different sections of the population. As part of the programme for strengthening public cooperation and participation during the Third Plan, it is proposed to intensify the existing arrangements for bringing home the implications of rapid development and carrying the message of the Plan to the masses throughout the country.

15. *Wider aims.*—There are certain higher tasks which are related to the basic needs, ideals and goals of the nation. In the present circumstances they create special obligations for the people. The foremost need now is that the attitudes of the people and the pattern of conduct, which prevail in the community should be in harmony with the national purposes. There are three constituents of this pattern which may be regarded as the most essential in this context. In the first place, love of the nation and faith in its great destiny should become the dominant feeling in every heart. By common consent, whatever tends to impair the integrity and unity of the country should be held up to public censure. There should be a growing understanding of what kind of behaviour will hurt the cause of national unity and with what consequences. Dedicated workers can in a hundred ways help to project the image of a strong and united nation in the consciousness of every citizen. They can create the realisation how important and indispensable the united endeavour of the people is for every thing of value which the individuals and groups in the country can seek and aspire after. Voluntary organisations with links in different parts of the country can help to create a sense of oneness and a common outlook by engaging the people in simple activities of service to the community which are performed all over the country as a great national programme. Secondly, it is envisaged that progressive socialisation and cooperative growth should be the basis of the social and economic order that is being created in this country. Thirdly, it should be remembered that it is only on the basis of right living that a strong nation and a just social order can be built. Every one will have to work for the good life which all can share. A society in which many must suffer so that a few may prosper is to be disfavoured. To bring this about basic changes are needed in the habits and outlook

of the people which may reflect a keen appreciation of social justice and our common humanity. Certain norms of behaviour, with accent on restraint, discipline and consideration for others, have to be cultivated and woven into the fabric of national character. Stress should be laid on the observance of 'Sadachar' (moral and social standards) in political and social relations and in all our business and economic activities. When social change of a large order has to be achieved in a relatively short period, the people's part in respect of scale and intensity of effort has to be such as to impart to it the character of a mass movement. Here is a limitless horizon and the widest scope for voluntary service through people's organisations. It should be realised that what is confronting us now is the call of a revolution to which people's mind must get attuned. The idealism and patriotic devotion of the people will find their highest expression in the service of this revolution.

#### ORGANISATION AND TECHNIQUES

16. Since so much is expected of public cooperation and participation through voluntary organisations, it is important that they should grow in strength and dimensions so as to be capable of discharging their self-imposed obligations adequately. This will depend very much on the extent to which they inspire confidence by the proper and efficient execution of the programmes they undertake and the contribution they make to the satisfaction of the felt needs of the people. The spare time and other resources placed at their disposal must be put to the most effective use. This points to the need for advance planning, a proper assessment of requirements, training of personnel, systematic execution and adequate supervision and evaluation.

17. Voluntary organisations should establish a relationship of intimate collaboration with local bodies and for certain purposes act as agencies of the panchayats, municipalities, etc. The programmes which call for cooperation of the people may be framed jointly and the role and place of voluntary organisations should be clearly specified. Official agencies should provide them with assistance and facilities to the maximum extent but their direction and control must be scrupulously left to the leadership of voluntary organisations. In this way alone, these organisations can acquire a national character and make an appeal to all citizens irrespective of their political affiliations. In response to local needs small units of voluntary workers are formed in many places. They should be encouraged and helped by the larger bodies to enable them to make a more effective contribution. This assistance may take the form of training of the workers, guidance and provision of various facilities.

18. Spontaneous development of activities on a voluntary basis is welcome but there is a danger of duplication and frittering away of valuable energy and resources. Voluntary organisations should, therefore, develop

a common approach, work in close collaboration and specialise in certain fields for which they are best equipped. A measure of coordination has already been achieved. This may usefully be extended to cover a variety of activities including training, research, pilot projects, pooling of information and experience, publication of journals and guiding material and dealing with official agencies.

19. Voluntary activities have so far drawn their sustenance from individuals and such assistance as the State has been able to furnish. A strong base for voluntary service can be created if it can derive support from a large number of institutions and establishments in the field of education, entertainment, business, journalism, etc. They can help in raising funds through collection drives and charity shows. They may also accept responsibility for some specific jobs. They can render much useful service by permitting the use of their accommodation, equipment and other facilities, outside working hours for programmes and activities of voluntary organisations.

20. The personnel for voluntary organisations has to be drawn from all walks of life specially from amongst social workers, teachers, members of various professions, members of Legislatures and local bodies and public servants. Persons retired from active service, either in civil occupations or the army, have given a good account of themselves in this field, and can be drawn into these activities in much larger numbers. The mainstay of this movement will have to be the youth of the country who can be enlisted and trained for activities aiming at their own welfare and the common good.

21. After a period of trial and experimentation, the concept of Lok Karya has been evolved to impart to non-official voluntary action the required degree of planning and continuity. The Lok Karya Kshetra, which corresponds to the area of an N.E.S. Block, would offer a common platform for voluntary bodies and bring about an integration of their various activities at the field level. The study of Lok Karya Kshetras undertaken by the Programme Evaluation Organisation has shown that workers in this programme are able in a special measure to bring intimate knowledge of the people and their problems to the task of mobilising local resources and manpower and overcoming such barriers to development as ignorance, factions and inadequate facilities for extension work in the villages. The approach is now being extended to urban areas also.

22. University Planning Forums are expected to play an increasing role during the Third Plan in bringing universities and colleges into closer contact with the larger community and in enabling teachers and students to contribute towards national development in constructive programmes undertaken in collaboration with panchayati raj institutions, municipal bodies and voluntary organisations. Studies and surveys undertaken

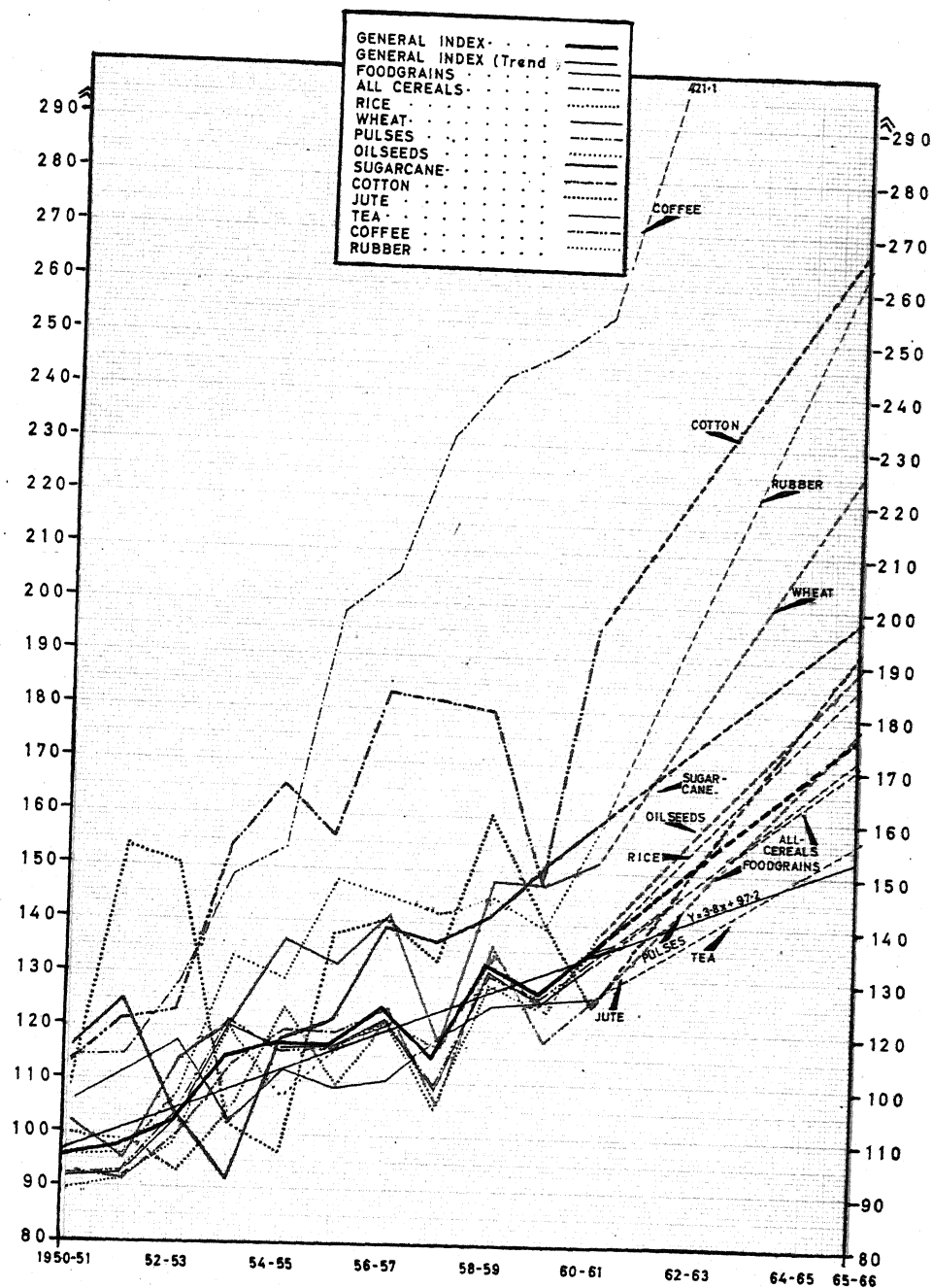
during the Second Plan by teams constituted by planning forums have afforded useful opportunities to students and youth to gain insight into social and economic problems and valuable suggestions have been thrown up at seminars organised by planning forums from time to time. These and other activities will be further developed during the Third Plan. It is also hoped that planning forums may be able to organise Plan information centres which will help students to identify themselves more and more with the goals for which the nation will strive during the Third and subsequent Plans.

#### TRAINING, RESEARCH AND EVALUATION

23. The tasks before the workers engaged in activities relating to public participation are by no means simple or easy. Their primary concern is to change the outlook of the people, win their confidence and stimulate them into new endeavour. They are faced with considerable inertia and conflicting social forces at work. Complex social conditions and problems are encountered. To be able to do their part reasonably well, these workers must receive intensive training of a special kind. This aspect had been largely neglected till recently, when for the workers of the Lok Karya Kshetra programme, training facilities were provided on a regular basis. Training of part-time and whole-time workers from the village upward should be undertaken on systematic lines, so that they may be enabled to carry out their duties with an amount of skill and understanding. To create a sound basis for training programmes and to develop suitable methods and techniques of public participation, the current experience should be subjected at intervals, to close study and analysis. Group discussions should also be organised for this purpose. There is a large scope for research into the dynamics of social change, the attitudes of various groups towards problems and programmes placed before them, and the effectiveness of techniques employed for securing cooperation and participation of the people. Pilot projects to test new ideas should be taken up in different parts of the country. Facilities should be provided for evaluation of the activities of the voluntary organisations. The results of these studies and experiments should be embodied in suitable literature and guidance material.

# INDEX OF AGRICULTURAL PRODUCTION

BASE 1949-50 = 100







## CHAPTER XIX

### AGRICULTURAL PRODUCTION

PROGRAMMES of agricultural production lie at the base of the comprehensive approach to the reconstruction of the rural economy which is embodied in the Third Five Year Plan. Development of irrigation, from large as well as small works, soil conservation programmes and supplies of fertilisers, improved seed and credit, along with the provision of extension services reaching down to the village level, are measures undertaken directly to increase production. In support of these programmes, through the community development movement, the energies of each village community as a whole are sought to be harnessed and its manpower and other resources effectively mobilised. Land reform policies aim at removing impediments to greater production due to the agrarian structure inherited from the past and to prepare the way for the development of a progressive agriculture organised on a cooperative basis. The various programmes of cooperative development which have been undertaken and will be given still greater emphasis in the Third Plan are intended to build up the necessary institutional framework for rapid economic development in rural areas such as will be of special benefit to the weaker sections of the rural population. Schemes for increasing agricultural production are closely bound up with the success of animal husbandry and dairying and the development of fisheries and of rural industry. From the aspect of long-term development, care of forest wealth, conservation of soil and moisture and the growing of village fuel plantations are of great importance. In some parts of the country rural electrification is already beginning to make a significant impact on rural life through extension of irrigation and speeding up of technological change; this impact will become progressively larger. These various aspects of agricultural development and, in particular, the specific programmes for increasing agricultural production for which the Plan provides, gain in significance when seen against the wider background of the large-scale transformation in rural life which is being brought about through successive Five Year Plans.

#### PROGRESS UNDER THE FIRST AND SECOND PLANS

2. By the end of the Second Plan, the index of agricultural production (base-1949-50) rose to 135, the index for foodgrains being 132 and that for other crops 142. In the First Plan, agricultural production rose by about 17 per cent. During the Second Plan, two years out of five—1957-58 and 1959-60—were unfavourable, and the overall increase

in agricultural production amounted to about 16 per cent. The following Table shows the production trends since 1949-50\*.

Table 1: Agricultural production—1949-50—1960-61.

commodity	unit	1949-50	1950-51	1955-56	1956-57	1957-58	1958-59(a)	1959-60(b)	1960-61(c)
rice	million tons	23.7	20.9	27.1	28.6	24.9	30.4	29.3	32.0
wheat	"	6.6	6.6	8.6	9.3	7.7	9.8	9.7	10.0
all cereals	"	48.4	43.7	54.9	57.4	53.0	62.6	60.5	64.0
pulses	"	9.2	8.5	10.9	11.4	9.5	12.9	11.2	12.0
foodgrains (cereals and pulses)	"	57.6	52.2	65.8	68.8	62.5	75.5	71.7	76.
oilseeds	"	5.1	5.1	5.6	6.3	6.1	6.9	6.4	7.1
sugarcane (gur)	"	4.9	5.6	6.0	6.8	6.9	7.1	7.6	8.0
cotton	million bales	2.6	2.9	4.0	4.7	4.7	4.7	3.8	5.1
jute	"	3.1	3.3	4.2	4.3	4.1	5.2	4.6	4.0
all commodities (index number)		100	95.6	116.8	124.0	114.6	132.3	127.2	135.0

3. Before the Second Plan took final shape, it was realised that the programme of economic development with special emphasis on heavy industries which the Plan embodied would demand a larger increase in agricultural production than had been at first envisaged. Accordingly, in consultation with State Governments, the initial targets were reviewed, and in November, 1956, the following revised targets were proposed: foodgrains, 80.5 million tons; oilseeds, 7.6 million tons; sugarcane (gur), 7.8 million tons; cotton, 6.5 million bales; and jute, 5.5 million bales. The level of food production in 1960-61 which has been shown in the Table above at 76 million tons is expected to reach about 78 million tons when the revised estimates of crop production become available. The Second Plan target for the production of sugarcane has been exceeded; on the other hand, there has been stagnation in cotton and jute. In oilseeds also, production has fallen below the target. In view of the production trends during the Second Plan, it is of the highest importance that in the Third Plan, besides achieving self-sufficiency in foodgrains, substantial increases should be secured in commercial crops, specially cotton, oilseeds and jute. With the growth of the economy and increase in domestic demands as well as the need to step up exports, success in increasing the production of commercial crops is as vital as increase in the production of foodgrains.

\* The coverage of crop statistics gradually increased in the course of the First Five Year Plan and from time to time changes were also introduced in the techniques of estimation. The estimates of production of foodgrains in the table have been adjusted to suit these changes upto 1956-57.

(a) Partially revised estimates

(b) Final estimates.

(c) Provisional.

4. In the Second Plan, out of a total anticipated outlay under agriculture and community development of Rs. 529 crores, agricultural production programmes accounted for about Rs. 290 crores. In addition, there was a total outlay of Rs. 372 crores on major and medium irrigation schemes. In the course of the Plan additional resources were provided for minor irrigation. The following Table summarises information received from State Governments regarding progress in carrying out programmes of agricultural development.

Table 2: Agricultural programmes—progress in the Second Plan

programme	unit	estimated achievement
major and medium irrigation . . . . .	million acres	6.9
minor irrigation . . . . .	(gross)	9.0
soil conservation on agricultural lands . . . . .	"	2.0
land reclamation . . . . .	"	1.2
area under improved seeds (foodgrains) . . . . .	"	55
consumption of nitrogen (N) . . . . .	thousand tons	230
consumption of phosphatic fertilisers (P <sub>2</sub> O <sub>5</sub> ) . . . . .	"	70
urban compost . . . . .	million tons	3
rural compost. . . . .	"	83
green manuring . . . . .	million acres	11.8

Apart from the influence of unfavourable seasons, greater progress might have been achieved in agriculture during the Second Plan if the benefits of the substantial investments incurred, for instance, in the extension of irrigation, both from small and large irrigation works, and in the establishment of seed farms could have been realised more speedily. Programmes which require large-scale participation on the part of the people, such as, soil conservation, made only limited progress. The consumption of fertilisers, which has been recently stepped up to a considerable extent, increased very slowly during the first four years of the Second Plan. This was due both to the shortage of foreign exchange and to the inadequate progress made in establishing the new fertiliser plants. When the agricultural targets for the Second Plan were reviewed in 1956, it was specially emphasised that programmes for the multiplication of improved seeds, for the use of fertilisers and for irrigation, soil conservation, etc., would be implemented so as to yield the maximum benefits within the shortest time. It was envisaged that there would be carefully worked out programmes for covering every acre of land enjoying irrigation or assured rainfall with improved seeds and that the supply of fertilisers and organic and green manures would be ensured. Sufficient progress was not made in these directions. Consequently, a much larger task in agriculture remains to be accomplished during the Third Plan. More than any other factor, the success of the Third Plan will turn on the fulfilment of its agricultural targets.

## APPROACH IN THE THIRD PLAN

5. In formulating agricultural production programmes for the Third plan, the guiding consideration has been that the agricultural efforts should not be impeded in any manner for want of financial or other resources. Accordingly, finance is being provided on a scale which is considered adequate, and the further assurance is given that if, for achieving the targets of production, additional resources are found necessary, those will be provided as the Plan proceeds. Supplies of fertilisers are also to be made available on a large scale. Efforts are being made to strengthen agricultural administration in the States, and stress is being placed on the closest possible coordination between different agencies, notably, those concerned with agriculture, cooperation, community development and irrigation. Supplies of credit through cooperative agencies are being expanded, and the need for linking credit with production and marketing is emphasised. It may be stressed, however, that while these efforts should go a long way, they are not in themselves a sufficient guarantee that the agricultural objectives of the Third Plan can be realised.
6. The central task of the community development organisation and of extension workers at the block and village levels is to mobilise the rural community for intensive agricultural development, to impart a sense of urgency and direction to the work of all the agencies operating on behalf of the Government, and to ensure that the requisite supplies, services and technical assistance are available at the right time and place and in the most effective manner possible. At the same time, the Agriculture Departments must place at the disposal of the community development organisation at the block level the supplies, trained personnel and other resources needed. This means that all families in the village, specially those engaged in cultivation, must be involved in the agricultural effort through the village cooperative and the panchayat, and enabled to achieve larger results through village production plans. In view of the experience in the Second Plan, these essential conditions cannot be too greatly stressed. As the country enters upon the larger tasks of the Third Plan, there is urgent need to improve the organisation of agricultural programmes at the local level as well as at higher levels in the States and at the Centre.
7. The Third Plan provides for an outlay on production programmes in agriculture, including large and small irrigation schemes, soil conservation and cooperation, of about Rs. 1280 crores, the comparable outlay in the Second Plan being of the order of about Rs. 667 crores.

Table 3: Outlays on agricultural production

	(Rs. crores)	
	Second Plan	Third Plan
agricultural production		
minor irrigation . . . . .	98.10	226.07
soil conservation . . . . .	94.94	176.76
cooperation . . . . .	17.61	72.73
community development (agricultural programmes)	33.83	80.10
major and medium irrigation . . . . .	50.00	126.00
total . . . . .	372.17	599.34
	666.65	1281.00

Besides resources provided for the Third Plan, finance from cooperative agencies will also increase substantially. Short-term and medium-term loans are expected to go up from about Rs. 200 crores and the amount outstanding on account of long-term loans from about Rs. 34 crores in the last year of the Second Plan to about Rs. 530 crores and Rs. 150 crores respectively by the end of the Third Plan.

8. Programmes and targets for agriculture embodied in the Draft Outline of the Third Plan were based on preliminary studies undertaken by State Governments and the Central Ministries concerned. These were intended to provide a basis for detailed agricultural programmes to be prepared in the light of local conditions and possibilities in districts, blocks and villages. It was suggested that with a view to securing the largest measure of local participation and, in particular, the fullest utilisation of the local manpower resources, programmes relating to agriculture, minor irrigation, soil conservation and the development of cooperation should be formulated through district and block plans. An attempt has been made in several States to draw up local plans on these lines. It has been observed, however, that plans at the local level are easier to formulate after the broad dimensions and objectives of the State plans have been established. Although in proposing targets and in evolving programmes, State Governments have taken advantage of their experience in preparing district and block agricultural plans, on the whole, the programmes and the estimates of production which now form part of the plans of States have been arrived at through studies by the Departments concerned at the State level. Their proposals have been considered in two series of discussions between the States, the Planning Commission and the Central Ministries, and care has been taken to prepare them in some detail. Nevertheless, the limitation persists that they are not yet as firmly based on area plans as had been earlier hoped for. For realising the programmes and targets accepted by States there must, therefore, be continuing emphasis on the drawing up of annual district and block agricultural plans within the general scheme of the five year programme. Without district, block and village agricultural production plans, it will be difficult to ensure the widespread cooperation and local initiative and understanding of the tasks to be accomplished which are the fundamental conditions for success in agricultural development.

#### PROGRAMMES FOR INCREASING AGRICULTURAL PRODUCTION

9. The principal technical programmes for increasing agricultural production, around which intensive work is to be organised, are: (1) irrigation, (2) soil conservation, dry farming and land reclamation, (3) supply of fertilisers and manures, (4) seed multiplication and distribution, (5) plant protection, (6) better ploughs and improved agricultural implements, and adoption of scientific agricultural practices. In all areas, and specially in the development blocks taken up under the community development programme, these programmes will need to be implemented with

the largest measure of participation on the part of local communities and to reach as many families as possible through the village production plans. In addition, in fifteen districts, in which conditions are specially favourable on account of the availability of irrigation and assured rainfall, and the cooperative movement is fairly established, it is proposed to undertake agricultural programmes on a more intensive scale than may be generally feasible. In all areas, and more especially in these, a concentrated effort will be made to reach all farmers and to promote the adoption by them of a minimum combination of improved practices.

10. The main targets under different development programmes for agriculture are summarised below:

Table 4: Targets of agricultural programmes—Third Plan

programme	unit	target
I. irrigation :		
1. major and medium irrigation (gross)	million acres	12·8
2. minor irrigation (gross)	"	12·8
(a) agriculture	"	9·5
(b) community development	"	3·3
total		25·6
II. soil conservation, land reclamation, etc.		
(a) soil conservation on agricultural lands	"	11·0
(b) dry farming	"	22·0
(c) land reclamation	"	3·6
(d) reclamation of saline and alkaline lands	"	0·2
III. additional area under improved seeds— foodgrains	"	148·0
IV. consumption of chemical fertilisers		
(a) nitrogenous (N)	thousand tons	1000
(b) phosphatic (P <sub>2</sub> O <sub>5</sub> )	"	400
(c) potassic (K <sub>2</sub> O)	"	200
V. organic and green manuring		
(a) urban compost	million tons	5·0
(b) rural compost	"	150·0
(c) green manuring	million acres	41·0
VI. plant protection	"	50·0

The targets of agricultural development agreed to in consultation with individual States are set out in Annexure I to this chapter.

#### MINOR IRRIGATION

11. The gross area irrigated during the Third Plan from irrigation schemes is estimated at 25·6 million acres—12·8 million acres each from major and medium irrigation works and from minor irrigation works. Of the latter, schemes financed from provisions under the community development programme are expected to irrigate about 3·3 million acres, the rest of the irrigation being secured from schemes within the agricultural programme.

Statistics relating to land utilisation are not yet available beyond 1957-58, and it is difficult to ascertain the actual increase in net irrigated area during the first two Plans as a result of the irrigation programmes which have been carried out. Minor irrigation works include a variety of schemes, some of which stabilise existing irrigation or, as in the case of drainage schemes and embankments, improve the existing irrigation without necessarily increasing the area irrigated. Allowance has also to be made for minor irrigation schemes which go out of use on account of 'depreciation' or are replaced by irrigation from major and medium irrigation schemes. In the Draft Outline it was reckoned that at the end of the Second Plan the net irrigated area might be of the order of 70 million acres, increasing to about 90 million acres by the end of the Third Plan. Recent estimates appear to suggest lower figures, but the available data are far from satisfactory. There is considerable discrepancy between statistics of progress reported in respect of both large and small irrigation schemes, and those relating to land utilisation which become available after a lag of about three years. It is proposed to undertake a special investigation into these differences.

12. In the Third Plan the total outlay on minor irrigation from provisions under agriculture and community development is likely to be about Rs. 250 crores, in addition to such finance as cooperative agencies may provide. Thus, minor irrigation is one of the larger investment programmes in the Third Plan. The principal advantages of minor irrigation works are that they can be executed quickly, entail small outlays and there is only a short lag between their completion and the realisation of benefits. Moreover, they can be undertaken at the initiative of individuals and small groups and offer scope for participation by the community. Yet, it has been observed that minor irrigation programmes are tending increasingly to develop as programmes for small-scale irrigation works executed by Government agencies with little voluntary labour or participation by the people. It is of the utmost importance that for the greater part minor irrigation should be developed in all States as essentially a community programme in which local contributions in money and labour are specially stressed. When the scale of the minor irrigation programme becomes large, it involves problems of organisation, investigation and utilisation which may in some ways be even more difficult than those which arise in the case of larger irrigation works. In the early phases of the minor irrigation programme the simpler categories of works can be taken up and the need for extended surveys is not always felt. Preliminary studies suggest that the possibilities of minor irrigation development could extend eventually to a gross area of about 75 million acres. To realise this potential, surveys and investigations should be undertaken in every State in a systematic manner for various river basins, and there should be adequately staffed investigation units working in different areas. At present few areas have minor irrigation



projects which are worked out sufficiently in advance for implementation without delay.

13. Experience during the First and Second Plans suggests certain directions in which the implementation of the minor irrigation programme needs to be improved if full benefits by way of increase in agricultural production as well as adequate financial returns are to be realised. These relate to better maintenance, adoption of appropriate crop patterns, better utilisation and water management, and efficiency in execution. Investigations undertaken by the Committee on Plan Projects and other studies have pointed to the need for strengthening the present arrangements for the maintenance of minor irrigation works on the part of the State Governments as well as local communities, thereby reducing losses due to 'depreciation' which appear to occur at present at an alarmingly high rate. An increasing proportion of minor irrigation works now under construction are such that State Governments should undertake responsibility for their maintenance. The technical and administrative organisation for minor irrigation works must therefore be strengthened and regular inspection and supervision assured.

It is also essential that certain obligations should be placed by law on local communities and beneficiaries. In most parts of India obligations relating to the maintenance of field channels were long in existence and were entered in revenue records. These customary obligations have, however, tended to fall into disuse, and greater definiteness has now to be given to them through legislation. Some States have already enacted such legislation. The main obligations to be undertaken relate to construction and maintenance of field channels, maintenance of bunds and tanks, and desilting of the beds of tanks where the works are not of such magnitude that they must be taken up by Government. It is envisaged that statutory powers should be conferred on village panchayats for enforcing these obligations on the part of beneficiaries. If the latter fail to carry out the works in time, the panchayat should carry them out and realise the cost. In the event of village panchayats failing to carry out the works, the Government or, on its behalf, the Panchayat Samiti of the development block may arrange for their execution, the cost being recovered eventually from beneficiaries.

14. The problem of reducing time lags between the completion of works and realisation of their benefits arises not only for large schemes but also for a large proportion of small irrigation schemes. Being widely dispersed, minor irrigation works demand in fact greater attention from the extension agencies. A recent field study of the problems of minor irrigation by the Programme Evaluation Organisation suggests that non-utilisation of facilities is a factor of quite serious dimensions even in the case of minor irrigation, and calls for close study in each area with reference to different types of works. Irrigation in any area calls for a series

of agricultural measures, including adoption of new crop patterns, land development, soil and water conservation and other improved agricultural practices. It is important that agricultural extension personnel should concentrate on these measures, so that irrigation yields the expected benefits. The methods to be adopted are well-known and the question is primarily one of advance planning and of giving continuous attention to the tasks mentioned above.

15. Execution of the minor irrigation programme has suffered to some extent because experienced personnel able to adapt their technical knowledge to different kinds of construction works have not been available in sufficient numbers. The situation has improved to some extent. However, in view of the large size of the programme to be carried out in the Third Plan, it is necessary that suitable technical cadres should now be built up in the States. This will become all the more important if a large-scale rural works programme devoted specially to agricultural development, as has been visualised, is to be successfully organised. Moreover, in several parts of the country the scope of the minor irrigation programme is itself being enlarged through the development of rural electrification. During the Second Plan, minor irrigation programmes suffered to some extent from difficulties in acquiring land, inadequate delegation of financial and administrative powers to personnel in charge of works, and failure to sanction works in advance of the construction season.

16. There are other problems of an administrative nature to which attention should be drawn. There has been a tendency for overlapping financial provision for minor irrigation schemes under agriculture and under community development. It is necessary that the financial provisions for minor irrigation schemes, whether under agriculture or community development, are pooled together at the block level and utilised for the maximum benefit of the area. It is considered that for individuals assistance for minor irrigation works should come, as far as possible, from cooperative agencies and taccavi loans and from the Agricultural Departments. Provisions available under the community development block budget should give preference to schemes benefiting large numbers of persons jointly. They may be undertaken either by village panchayats or by cooperative groups.

17. In recent years, in irrigation as in other fields of agricultural development, different kinds of subsidies have been used as a method of stimulating new activity. The general policy should be to reduce these subsidies progressively and, where possible, to eliminate them. There might be some justification for a subsidy which is intended to benefit the poorer sections of the community or to support for a limited period innovations or improved practices which have not yet been accepted. The existing schemes of subsidies should be reviewed critically

and, after examining other ways of achieving the same objects, phased programmes should be drawn up for reducing and, to the extent feasible, terminating the subsidies.

18. For the Third Plan the Central Government have sponsored two new schemes in the field of minor irrigation. A programme of applied research is to be taken up for the study of problems which arise in the execution of minor irrigation works with a view to effecting economy in construction costs, efficient operation of irrigation works and economic use of water reaching the fields. A scheme for training agricultural graduates in irrigation water use has also been formulated. These schemes will be undertaken through the agency of both Central and State institutions.

19. In some parts of the country, specially the Punjab and Uttar Pradesh, the problem of water-logging has become serious. With a view to reclaiming water-logged areas and checking deterioration, agricultural programme provide for schemes for improving surface drainage and installing shallow tubewells.

20. For several areas an extensive programme of exploratory tubewells has been in operation. Out of 379 drillings which have been attempted, as many as 195 have proved successful upto March, 1961. The successful tubewells are being taken over by the State Governments concerned. If the data are made available more widely, the construction of private and cooperative tubewells could be encouraged in the more favourable areas.

21. *Soil conservation, dry farming and land reclamation.*—Considerable emphasis is being given in the Third Plan to soil conservation and dry farming. These programmes are dealt with in the Chapter on Soil Conservation. A word may, however, be said here on land reclamation. A technical committee is at present engaged, in cooperation with States, in surveying and locating large blocks of waste lands. The committee has already completed its surveys of land classified as "other uncultivated lands excluding fallow lands" and "fallow lands other than current fallows" in seven States. In these, a total area of nearly one million acres comprising blocks of land of 250 acres or more which may be available for reclamation and resettlement has been located. Schemes for reclaiming these blocks will have to be drawn up. The area of 3.6 million acres shown as the target for land reclamation includes about 2 million acres in Rajasthan and also some other lands recommended by the technical committee. The programme for mechanised land reclamation operations will require personnel trained in the operation, maintenance and repair of tractors. In addition to the existing Tractor Training Centre at Budni (Madhya Pradesh) the Third Plan provides for the establishment of a second centre. The centre at Budni is also being developed.

22. *Fertilisers and manures.*—Supplies of fertilisers are proposed to be increased during the Third Plan in accordance with the following provisional schedule:

year	nitrogenous fertilisers (nitrogen)	(thousand tons) phosphatic fertilisers (P <sub>2</sub> O <sub>5</sub> )	potassic fertilisers (K <sub>2</sub> O)
1960-61	230	70	25
1961-62	400	100	82
1962-63	525	150	100
1963-64	650	225	130
1964-65	800	300	160
1965-66	1000	400	200

Programmes for indigenous production and for imports both of fertilisers and of the raw materials needed, are based on the above estimates.

23. Although there has been rapid growth in the demand for fertilisers and in recent years it has not been possible to meet the full requirements of cultivators, it will be a considerable administrative task to ensure the efficient distribution and use of increased supplies contemplated for the Third Plan. In this connection, reference may be made to the recommendations made by the Fertiliser Distribution Enquiry Committee, in particular, to the emphasis on the use of fertilisers in the form of mixtures with a view to promoting balanced fertilisation and making the best use of supplies of nitrogenous fertilisers, improved arrangements for distribution and attention to quality, and reduction in costs of distribution. As suggested by the Committee, for dealing effectively with problems arising out of increased distribution of chemical fertilisers, their storage and sales promotion, etc., a Central Fertiliser Marketing Corporation is proposed to be set up during the Third Plan period. The U.N. Fertiliser Mission which has recently studied the fertiliser problem has stressed the need for educational work with the small farmer for extensive soil tests to determine the kinds and quantities of fertilisers needed under different conditions, and for continuous research into the use of fertilisers. The availability of credit for enabling small cultivators to use fertilisers is also of the greatest importance. These considerations should be kept in view in implementing the programmes formulated by the States.

24. Despite progress in some directions, on the whole, sufficient stress is still not being laid in extension work on the development of local manurial resources, specially organic manures. Among the targets adopted by States for the Third Plan are about 5 million tons of urban compost, about 150 million tons of rural compost, and green manuring of about 41 million acres of land comparing to about 12 million acres at the end of the Second Plan. Except for the urban compost programme, which is organised through municipal committees and the larger village panchayats, fulfilment of the other targets is difficult to measure. It is

hoped that through intensive work at the block and village levels the targets for green manuring and rural compost will be further improved upon. Increasing emphasis is also proposed to be laid on utilisation of sewage. A direction in which there is need for intensive work is the production of nightsoil compost. This has been taken up on a pilot basis in several places, and it is suggested that the experience gained should now be studied with a view to formulating a larger and a more extended programme of development.

25. Some progress has been made in developing cowdung gas and manure plants suitable for use in villages. The Indian Agricultural Research Institute has designed a model of the gas plant which is being used in some villages near Delhi and elsewhere. The gas plant costs about Rs. 400 to Rs. 450, and this is a factor inhibiting its adoption on a wider scale. The more extended use of the gas plant will help increase soil fertility and crop yields besides contributing to the solution of the fuel problem.

26. Soil testing has an important contribution to make in determining the right use of fertilisers for increasing crop yields and maintaining soil fertility. In recent years a number of laboratories have been established and their studies are coordinated by the Indian Agricultural Research Institute. With the object of compiling data on soils, providing training in soil science and soil mechanics and undertaking both fundamental and applied soil research, it is proposed to set up a Central Institute of Pedology and Soil Mechanics.

27. *Seed multiplication and distribution.*—Establishment of seed farms in all development blocks to meet the requirements of foundation seed of improved varieties was one of the principal programmes undertaken in the Second Plan. In all, about 4000 seed farms are reported to have been set up and about 800 more are expected to be established in the early years of the Third Plan. At the end of the Second Plan, a large proportion of the farms established have begun to provide seed for multiplication by registered growers, and it may take two or three years more before the benefits of the programme begin to be realised on a significant scale. Although, on an average, an area of 25 acres for a seed farm was at first indicated, a fair proportion of seed farms are of larger size. At the larger farms it is easier to provide technical personnel of the requisite quality and to undertake production on a more economic basis. These considerations should be kept in view, specially in respect of seed farms which have still to be set up, and of those which, as a temporary measure, were started on leased lands. Each seed farm provides for a seed store. To ensure better distribution, in the Third Plan States have generally provided for the setting up of an additional seed store in every development block. At the end of the Second Plan, the area under food crops covered by improved seed is estimated at 55 million acres. This is expected to increase by 148 million acres in the course of the Third

Plan. While registered growers have a valuable role to play in the multiplication of improved varieties of seed, in formulating block and village agricultural plans, the aim should be to ensure that every village produces its own requirements of improved seed, undertaking as large a share of this task on a cooperative basis, but also making use of the better farmers. A field study of the multiplication and distribution programme for improved seed undertaken by the Programme Evaluation Organisation has revealed a number of weaknesses in the existing situation and in the working of seed farms. It is suggested that State Governments may review their proposals for the Third Plan in the light of these findings.

28. Considerable research has been undertaken in recent years for evolving high-yield hybrids of maize, and it has been found that with moderate amounts of nitrogenous fertilisers the yield of maize hybrids increases more than twice that of the local varieties. It is therefore proposed to take up the cultivation of hybrid maize on a countrywide scale, the first stage being to bring about 25 per cent of the maize area under hybrid varieties during the Third Plan. It is also intended to make a start with the production of hybrid jowar seed. The Ministry of Food and Agriculture propose shortly to establish a Seed Corporation with the object of ensuring production at selected farms under conditions of efficient management and maintaining purity and the maximum yield. An organisation is to be set up for the production of nucleus seed, and it is envisaged that cooperatives and other suitable organisations and, where necessary, individuals should function as certified seed agencies. Legislation for controlling the quality of seeds and regulating their production, marketing and movement is also under consideration.

29. *Plant protection.*—Over the past decade, plant protection measures have lagged behind several other aspects of the agricultural programme. In the Second Plan, the programme covered about 16 million acres of land. For the Third Plan, States have indicated a target of 50 million acres. The precise damage to crops from insects, rodent and other animal pests and on account of diseases, weeds and parasitic flowering plants, is difficult to assess, but there can be no doubt of its serious dimensions. Similarly, considerable losses are caused by the deterioration of foodgrains and other agricultural commodities during storage through insects, rats, mice, etc. Much of the damage can be prevented if plant protection measures are adopted on an adequate scale as an integral part of the agricultural programme. Plant protection organisations in several States need to be strengthened at various levels. In addition to special units which might function over larger areas, it is necessary that with a view to securing the maximum extension effect, manually operated dusters and sprayers should be supplied extensively to farmers and to village panchayats. With these it is essential to ensure the timely supply of pesticides.

30. *Improved agricultural implements.*—A serious gap in the agricultural programmes undertaken during the First and Second Plans has been in the field of improved agricultural implements. There is general recognition of the importance for scientific agriculture of improved tillage and harvesting practices, but specific action has been slow and insufficient. As has been pointed out, progress in the introduction of improved agricultural implements calls for steps at the same time in a number of directions.

31. The broad features of the programme for the adoption of improved agricultural implements proposed for the Third Plan may be briefly set out as follows:

- (1) Adequate supplies of iron and steel of the categories required for agricultural implements should be made available. Precise estimates of requirements should be prepared each year in advance based on the actual programme of production and distribution which it is proposed to carry out. Requirements for manufacture of implements should be estimated separately from those for repairs and maintenance. It will be an advantage to place the supplies of iron and steel for agricultural purposes at the disposal of the Agricultural Departments in the States.
- (2) The principal implements which should be recommended in each State for popularisation have been selected provisionally by groups of experts. The suggestions should be considered by States and a final selection should be made with a view to arranging for production, distribution, etc.
- (3) Four regional research, testing and training centres for improved agricultural implements have been set up by the Indian Council of Agricultural Research as part of its programme in the Second Plan, and are to be transferred to the States in which they are situated. It is proposed to establish one research, testing and training centre in improved agricultural implements in every State. Research, testing and training centres should be free to undertake manufacture on a commercial scale but, in the main, they should concentrate on the production of improved proto-types and of implements which are not in the market and of components of special quality which may be used by other fabricators. As part of the intensive agricultural district programme, workshops are also being established in a number of districts. For improved implements to spread out rapidly, their production should be taken up as a development programme at the district and block level, and industrial cooperatives for the manufacture of agricultural implements should be actively supported.

- (4) According to their conditions suitable extension arrangements should be made by State Governments at the district and block levels for demonstrating and popularising improved agricultural implements. It would not be possible to set up such units at the block level in all the development blocks in the country. It would, therefore, be an advantage to consider the possibility of setting up a small number of units, say four, at the district level and attach them to the district agricultural officer. These units could move between development blocks, working in each block under the direction and guidance of the Agricultural Extension Officer and the Block Development Officer. The units could provide the necessary orientation to village level workers and village artisans and could demonstrate improved implements to the cultivators. At the block headquarters there should be a stock of implements readily available for demonstration and hire. These implements could be purchased from within the block budget and additional implements could be provided by the State Agricultural Department.
- (5) Steps should be taken to strengthen the agricultural engineering section of State Agricultural Departments. The financial assistance extended to States for implementing the recommendations of the Report of the Agricultural Administration Committee will also be available for strengthening agricultural engineering personnel of the State Agricultural Departments at the State level and at the district level.
- (6) With due regard to the size of the programme to be undertaken each year, assured arrangements for credit for supplying improved implements should be made. Credit should be provided both through cooperative agencies and by way of taccavi loans. Plans for co-operative development drawn up so far do not provide sufficiently for credit for agricultural implements, and this aspect should receive special attention.
- (7) Agricultural workshops have been established at 25 extension training centres. It is proposed that all extension training centres should now be equipped with agricultural workshops for providing training facilities for village level workers, mechanics and artisans.
- (8) At the State level, there may be a Committee or a Board, including representatives from amongst farmers and manufacturers and others, for assisting in drawing up production programmes and devising suitable arrangements for distribution and ensuring supplies of raw materials.

With expansion in the agricultural implements programme, there will be need for considerably larger numbers of agricultural engineers than



the existing training facilities are likely to make available. This aspect has been taken into account in formulating the programme of technical education. The total provision in the Third Plan for the programme of agricultural implements is about Rs. 8 crores.

32. *Intensive agricultural district programme.*—In recommending the selection of certain areas for more intensive efforts, the Agricultural Production Team sponsored by the Ford Foundation observed that there were no inherent soil, climatic or other physical reasons for the present low yields. The Team, therefore, suggested that those selected crops and those selected areas in each State should be chosen which have the greatest increase potentialities. In pursuance of this proposal, the intensive agricultural district programme has been taken up, to begin with, in one district in each State. The programme is intended to contribute both to rapid increase in agricultural production in the selected areas and to suggest new innovations and combinations of practices which may be of special value elsewhere. In the selected districts an attempt will be made to provide all the essential elements for increasing production to the extent needed, such as, supplies of fertilisers, pesticides and improved seeds and improved implements, and composite scientific demonstrations will be laid out on a large scale. An effort will be made to provide credit on a scale sufficient to reach all farmers, including those previously considered uncreditworthy and credit and marketing will be linked. Extension personnel, specially in agriculture and cooperation, are being made available on a somewhat larger scale than in other areas so that they can work intensively with Panchayat Samitis and Village Panchayats and with co-operative organisations. Through benchmark surveys and systematic evaluation, high standards of performance will be insisted upon in these districts. The districts chosen for intensive development should give to the agricultural and other services in each State special opportunities for developing improved methods for extension and for planning of agricultural production at the block and village levels as well as in relation to the individual farmer.

#### ESTIMATES OF PRODUCTION IN THE THIRD PLAN

33. The development programmes which have been described above constitute the essential targets of the Third Plan. However, for various purposes, it is useful to estimate additions to production likely to be achieved on the assumption that the various development programmes are carried out and, along with these, improved agricultural practices are adopted on the scale contemplated. Although efforts have been made in recent years to base 'yardsticks' of additional production on precise experimental data, the measures adopted must be regarded at best as rough guides rather than as a satisfactory basis for firm targets. Moreover, in agriculture weather conditions are always a dominant element. These limitations

should be kept in view in comparing the following estimates of production which may be realised by the end of the Third Plan.

Table 5: Estimates of production in the Third Plan

commodity	unit	base level production 1960-61	target of additional production 1961-66	estimated production in 1965-66	percent- age inc- rease
foodgrains . . . .	million tons	76.0	24.0	100.0**	31.6
oilseeds . . . .	"	7.1	2.7	9.8	38.0
sugarcane (gur). . . .	"	8.0	2.0	10.0	25.0
cotton . . . .	million bales	5.1	1.9	7.0	37.2
jute . . . .	"	4.0	2.2	6.2*	55.0
coconut . . . .	million nuts	4500	775	5275	17.2
arecanut . . . .	thousand tons	93	7	100	7.5
cashewnut. . . .	"	73	77	150	105.5
pepper . . . .	"	26	1	27	3.9
cardamom. . . .	"	2.26	0.36	2.62	15.9
lac . . . .	"	50	12	62	24.0
tobacco . . . .	"	300	25	325	8.3
tea . . . .	million lbs.	725	175	900	24.1
coffee . . . .	thousand tons	48	32	80	67.7
rubber . . . .	"	26.4	18.6	45	70.5

Estimates of increase in production of major crops in different States are set out in a series of statements in Annexure II to this chapter.

34. According to the estimates of increased production the index of agricultural production (base-1949-50) should rise from 135 in 1960-61 to 176 in 1965-66, the total increase being about 30 per cent over the five year period. Increased production of the order envisaged above can take place only on the assumption that the various development programmes will be carried out effectively and with widespread public participation and use of local manpower and other resources and that intensive efforts will be made in every block to adopt improved agricultural practices.

\*Excludes mesta which may provide an additional 1.3 million bales in the Third Plan.

\*\*It is estimated that the production of rice in 1965-66 may be about 45 million tons, of wheat about 15 million tons, of other cereals about 23 million tons and of pulses about 17 million tons.

The following Table compares the average yield in lb. per acre during the period of the Second Plan and that anticipated for the Third Plan:

Table 6: Average production and yield per acre in the Second and Third Plans

crop	average annual production (mn. tons)		average yield (lb. per acre)		percentage increase during Third Plan over Second Plan	
	1956-57 to 1960-61	1961-62 to 1965-66	1956-57 to 1960-61	1961-62 to 1965-66	production	yield
foodgrains . . .	70.9	86.8	575	670	22.4	16.5
(i) rice . . .	29.3	39.4	807	1029	34.4	27.5
(ii) wheat . . .	9.3	12.1	662	795	30.1	20.1
oilseeds . . .	6.5	8.6	451	500	32.3	10.9
sugarcane (gur)	7.3	9.3	3206	3788	27.4	18.2
cotton (million bales)	4.6	6.1	95	108	32.6	13.7
jute. ( " )	4.4	5.1	1035	1200	15.9	15.9

The greater part of increase in yields will necessarily have to be secured in areas under irrigation and assured rainfall, but even in other areas through soil conservation and dry farming there should be some improvement in yields.

35. The estimates of production for the Third Plan given in table 5 represent an appreciable increase in per capita availability. In foodgrains, the availability per capita is expected to increase from 16 oz in 1960-61 to 17.5 oz per day in 1965-66 and consumption of cloth from about 15.5 yards to 17.2 yards per year. Consumption of edible oil is expected to go up from 0.4 oz to 0.5 oz per day over the Third Plan period.

36. A preliminary assessment of the likely changes in the Third Plan in the pattern of land utilisation suggests that the net area sown may increase from about 327 to 335 million acres and area sown more than once from about 52 to 67 million acres. The area of culturable waste is expected to diminish from about 47 to 41 million acres.

#### OTHER ASPECTS OF THE AGRICULTURAL PROGRAMME

37. *Commercial crops.*—Except for sugarcane, the targets set for commercial crops in the Second Plan have fallen short to a considerable extent. Therefore, in the Third Plan it is essential to intensify efforts for increasing the production of these crops, specially, cotton, jute and oilseeds. Over and above the provision for programmes like minor irrigation, seed farms and plant protection which will benefit all crops, outlays to the extent of about Rs. 26 crores have been provided for special development schemes relating to different commercial crops. As the Plan proceeds, it might be necessary to make larger resources available for special development schemes of commercial crops. Special care will be taken to ensure

adequate supplies of fertilisers for these crops. It might also be necessary to facilitate diversion of areas from millets to commercial crops. The aim is not only to attain higher levels of production, but also to secure larger supplies of varieties which have considerable export demand or which will save on imports.

38. Detailed programmes relating to different commercial crops have been worked out by various commodity committees. In the main, these involve expansion and intensification of programmes already adopted during the Second Plan. Some features of these programmes, on which special stress is being laid in the Third Plan, may be briefly mentioned.

It is proposed to provide necessary support for increasing the production of cotton and specially of long-staple varieties of cotton, such as, sea-island cotton in Mysore and Kerala and hybrid cotton in Gujarat and Maharashtra. The cultivation of sea-island cotton is to be extended from about 20,000 acres at present to about 300,000 acres at the end of the Third Plan.

Programmes for jute development are directed, in particular, towards improvement in quality through the provision of retting tanks and of high quality seeds. Greater attention will be given to the development of supplementary fibres, such as, mesta, sisal, ramie, etc.

Increase in the production of oilseeds is one of the critical targets in the Third Plan both to meet higher domestic demands and to provide surpluses for export. To increase the availability of vegetable oils for exports, it is proposed that in the course of the Third Plan at least about one-half of the cotton seed available should be utilised for extracting oil, and solvent extraction of expeller oilcakes should be substantially increased. Greater attention will also be given to problems connected with the development of non-edible oilseeds like *mahuva* and neem as also rice bran, etc.

The Ministry of Food and Agriculture propose to set up a Spices and Cashewnut Committee for undertaking research and guiding development in these crops. The programme for cashewnut development involves bringing under cultivation an additional area of about 300,000 acres.

In tobacco the main problem is to produce varieties for which there is demand abroad. Greater attention will, therefore, be given to the improvement of Virginia and other types of tobacco by ensuring supply of pure seed, provision of the types of fertiliser required, careful handling of leaves and better arrangements for curing. The increase in production during the Third Plan from 300,000 to 325,000 tons is intended almost entirely for the production of Virginia tobacco.

39. *Tea, coffee and rubber.*—Plantation crops, specially, tea, coffee and rubber, have been assigned high priority in the Third Plan. The Plan envisages increase in the export of tea from 465 to 550 million lbs. and more than twofold increase in exports of coffee from the present level of 340,000 cwt. The consumption of rubber has increased rapidly in recent years and is now estimated at 53,000 tons. Requirements by the end of the Third Plan are estimated at about 100,000 tons. In the course of the Third Plan it is proposed to increase the production of natural rubber from about 26,000 to 45,000 tons and also to produce about 15,000 tons of reclaimed rubber and 50,000 tons of synthetic rubber. Supplies of fertilisers on an adequate scale will be provided for all plantation crops. To facilitate replanting programmes arrangements are also being made to provide the necessary finance.

40. *Horticulture.*—A number of new schemes were introduced during the Second Plan for the development of fruit production. These include provision of financial assistance for planting new orchards and rejuvenating old ones, as well as facilities for training gardeners. During the Second Plan about 166,000 acres of new orchards were planted and about 132,000 acres of old orchards were rejuvenated, and over 4,000 gardeners were trained. The total area at present under fruits and vegetables is estimated to be about 6 million acres, of which nearly one-half is under fruit cultivation. In the Third Plan, the total area under fruits and vegetables is expected to increase to about 7 million acres. It is proposed to bring 235,000 acres under new orchards and to rejuvenate 250,000 acres under old orchards. Besides continuing schemes already in operation, the plans of States provide for the establishment of progeny orchards with nurseries and garden colonies. The nurseries will help in the supply of planting material of reliable parentage and guaranteed performance.

For the development of vegetable production, the plans of States provide for supply of improved varieties of seeds, plant protection measures and technical advice. Arrangements are also being made for certification of vegetable seeds.

Development of fruit and vegetable preservation has been assisted for some years past through subsidy on tinplate for fruit and vegetable products, rebate of excise duty on sugar used for exported products, and provision of training facilities, technical advice and development loans. The output of fruit and vegetable products increased from about 20,000 tons at the end of the First Plan to about 40,000 tons in 1960-61 and is expected to rise to about 100,000 tons by the end of the Third Plan.

41. *Subsidiary foods.*—Subsidiary foods include primarily potatoes, sweet potatoes and tapioca and other vegetables and fruits and certain

processed and derived fruits. The Third Plan includes programmes for the increased production of these articles. Their greater use is intended to help diversify the pattern of food consumption and promote balanced nutrition. The Plan also include development schemes for the conservation and effective utilisation of perishable foodstuffs through refrigerated transport, establishment of dehydration units, cold storage and development of protein rich foods.

42. *Agricultural marketing.*—The total number of markets in the country is about 2500. The number of regulated markets increased from about 470 at the end of the First Plan to 725 at the end of the Second Plan. In the course of the Third Plan it is proposed to bring the remaining markets within the scheme of regulation. The programme for grading commodities under the Agricultural Produce (Grading and Marketing) Act is also being expanded.

The market intelligence service now covers about 500 markets. In the Third Plan it is proposed to extend further the number of reporting centres so as to provide adequate coverage for all areas in the country and strengthen the dissemination of market news.

An increasingly important aspect of agricultural marketing is the development of co-operative marketing organisations at various levels. Programmes for the expansion of co-operative marketing have been described in an earlier chapter.

43. *Storage.*—Programmes for the expansion of storage capacity with the Government, warehousing corporations and various co-operative organisations were initiated during the Second Plan. The Central Government has at present a total storage capacity of about 2.5 million tons, of which about a third is owned by Government. It is proposed to increase this to about 5 million tons, of which about 3.5 million tons will be owned by Government. The warehouses of the Central and State warehousing corporations have a storage capacity of about 350,000 tons; this is to be increased to over 1.6 million tons. In addition, the capacity of the godowns of co-operative marketing societies and primary societies is expected to go up from about 800,000 tons to about 2 million tons. The Plan has allotted Rs. 25 crores for the construction of additional godowns by the Government for the storage of foodgrains and Rs. 8 crores for warehousing programmes. The provision of storage capacity is a vital step in the implementation of price policies under the Plan and such further resources as may be needed will be made available.

44. *Agricultural education.*—Proposals in the Third Plan relating to the expansion of agricultural education and research are discussed in

the Chapters on Technical Education and Scientific and Technological Research. In the course of the Third Plan, the number of agricultural colleges will increase from 53 to 57 and the annual intake will go up from 5600 to 6200. The total requirements of agricultural graduates for the Plan period are estimated at about 20,000 and these are expected to be met.

45. During the Second Plan, an agricultural university was established at Pantnagar (Rudrapur) in Uttar Pradesh. Further proposals for setting up agricultural universities are under examination. The view that agricultural universities have a special contribution to make towards the development of agriculture has been urged in a series of expert reports on agricultural education. It is pointed out that if India's agriculture is to be raised to levels comparable with those of advanced countries, agricultural education of the traditional type, which is not sufficiently linked with research and extension will not be adequate in relation to the complex and changing problems of the vast body of cultivators, most of them operating very small holdings. The agricultural university seeks to bring together a number of related fields of study, such as, agriculture, animal husbandry, veterinary science, dairying, basic sciences and humanities. The underlying concept is that the responsibility of the agricultural university extends beyond teaching to applied as well as fundamental research in agriculture and involves special obligations towards cultivators in the area served by the university, in particular, to discuss their problems by working with them, transmit the results of research, and bring teaching, research and extension into an integrated view of agriculture and agricultural education.

46. *Agricultural research.*—The Plan provides for an outlay of about Rs. 28 crores for agricultural research—about Rs. 11 crores at the Centre and Rs. 17 crores in the States. In the past, agricultural research tended to be confined mainly to government farms and research stations and its results did not reach cultivators to any great extent. Extension activities have brought research workers into closer contact with farmers and presented them with new problems. Research organisations in the States are being strengthened for dealing with these problems. For crops like wheat, rice, millets, cotton and oilseeds, it is proposed to develop research facilities on a regional basis in addition to work undertaken in the States. The Plan provides for intensive study of irrigation practices in river valley projects and for working out the water requirements of crops, new crop rotations, and problems connected with the use of fertilisers in irrigated areas. Among the new centres of research to be established in the Third Plan are an institute for soil science and pedology, a forage and grasslands research institute and virus research institute.

47. *Agricultural administration.*—In view of the large programmes of agricultural development, the need for strengthening Agricultural Departments in the States has been felt for several years. To this end a series of proposals were made three years ago by the Agricultural Administration Committee. These include strengthening of staff at various levels, revision of terms and conditions, and expansion of facilities for training, education and research. To a considerable extent, the plans of States incorporate schemes for strengthening Agricultural Departments which have been worked out in the light of the recommendations made by the Committee. However, there has been some delay in implementing proposals for strengthening State agricultural administration. It is, therefore, suggested that these should be given effect to as a matter of first priority.

48. *State farms.*—A Central mechanised farm with an area of about 30,000 acres was established in 1956 at Suratgarh in Rajasthan. The possibility of establishing more State farms on similar lines has been studied and it is proposed to set up one and possibly two more farms during the Third Plan.

49. *Agricultural price policy.*—For achieving the high targets of agricultural production set for the Third Plan, it is important that growers should have full confidence that the additional effort and investment which are called for will yield adequate return. Changes in the prices and production of fibres during the last few years show that wide fluctuations in prices affect the growers' capacity to make sustained efforts for increasing production. The fall in prices of jute in 1958 affected production in subsequent years. The assurance of minimum remunerative prices for important cereals and cash crops like cotton, oilseeds and jute over the period of the Plan will provide the necessary incentives for increasing production, thus adding to the effectiveness of the various development programmes provided for in the Third Plan. With this object in view, decisions regarding the prices at which Government should buy and sell, should be taken sufficiently in advance of the sowing season. Where floor and ceiling prices are fixed, they should be related to the requirements of production, and the range between the minimum and maximum prices should not be too wide.

50. Cooperative marketing societies are an important means for imparting a certain degree of staying power to the growers, particularly in relation to adverse seasonal fluctuations in prices. Cooperative and State agencies for the purchase and sale of the principal agricultural commodities at appropriate stages are, therefore, a key element in the organisation needed to achieve the agricultural goals as well as the objectives of price policy set by the Third Plan.



## ANNEXURE I

I.1. Gross area benefited by major and minor irrigation during Third Plan

(thousand acres)]

State/Union Territory	major irrigation	minor irrigation		
		total	agricultural sector	c.d. sector
I	2	3	4	5
Andhra Pradesh	1557	1427	1177	250
Assam	79	370	220	150
Bihar	2000	1064	564	500
Gujarat	864	1190	1050	140
Maharashtra	708	1210	1136	74
Kerala	255	56	192	64
Madhya Pradesh	850	711	536	175
Madras	241	578	524	54
Mysore	876	182	142	40
Orissa	946	270	120	150
Punjab	1301	1029	763	266
Rajasthan	1145	479	339	140
Uttar Pradesh	1042	2945	1812	1133
West Bengal	884	904	812	92
Jammu and Kashmir	38	54	29	25
Delhi	..	7	6	1
Himachal Pradesh	..	36	25	11
Manipur	..	15	14	1
Tripura	..	20	12	8
N.E.F.A.	..	7	5	2
total	12786	12754	9478	3276

# I.2. Area benefited by soil conservation and land development during Third Plan

(thousand acres)

State/Union Territory	soil con- servation on agricultural lands	dry farming	land reclama- tion	reclama- tion of saline and alkaline lands
I	2	3	4	5
Andhra Pradesh . . . . .	550	2000	229	..
Assam . . . . .	29	1	18	..
Bihar . . . . .	288	10	75	..
Gujarat . . . . .	1179	1200	12	45
Maharashtra . . . . .	5000	3160	24	37
Kerala . . . . .	70	..	..	..
Madhya Pradesh . . . . .	1392	4500	260	..
Madras . . . . .	340	400	225	1
Mysore . . . . .	270	540	22	38
Orissa . . . . .	300	500	..	8
Punjab . . . . .	46	500	240	50
Rajasthan . . . . .	178	4850	2000	10
Uttar Pradesh . . . . .	1067	4004	10	10
West Bengal . . . . .	114	100	432	..
Jammu and Kashmir . . . . .	7	..	20	..
Delhi . . . . .	..	5	..	4
Himachal Pradesh . . . . .	18	20	..	..
total . . . . .	10848	21790	3567	203

## I.3. Area under food crops to be covered with improved seeds during Third Plan

(thousand acres)

State/Union Territory	1960-61	1965-66
1	2	3
Andhra Pradesh . . . . .	1230	12780
Assam . . . . .	438	3000
Bihar . . . . .	2618	11800
Gujarat . . . . .	747	3025
Maharashtra . . . . .	2931	14538
Kerala . . . . .	500	1200
Madhya Pradesh . . . . .	6300	15298
Madras . . . . .	7250	9450
Mysore 7 . . . . .	4869	8876
Orissa . . . . .	1200	6200
Punjab . . . . .	3000	9000
Rajasthan . . . . .	4140	17000
Uttar Pradesh . . . . .	18961	29301
West Bengal . . . . .	1000	6000
Jammu and Kashmir . . . . .	147	240
Delhi . . . . .	1	1
Himachal Pradesh . . . . .	107	395
Manipur . . . . .	..	140
Pondicherry . . . . .		
total . . . . .	55441	148253

## I.4. Consumption of chemical fertilisers during Third Plan

State/Union Territory	ammonium sulphate		superphosphate		(thousand tons) muriate of potash	
	1960-61	1965-66	1960-61	1965-66	1960-61	1965-66
	1	2	3	4	5	6
Andhra Pradesh	273	524	90	350	..	..
Assam	10	60	5	25	..	..
Bihar	50	400	15	120	1	20
Gujarat	95	300	48	90	..	13
Maharashtra	100	581	53	324	..	..
Kerala	37	191	7	190	1	56
Madhya Pradesh	26	200	5	40	..	..
Madras	150	580	60	320	12	90
Mysore	87	300	20	320	..	11
Orissa	30	200	8	50	..	2
Punjab	40	280	2	24	..	..
Rajasthan	15	100	4	33	..	..
Uttar Pradesh	297	990	60	300	8	80
West Bengal	40	500	25	250	..	..
Jammu and Kashmir	4	14	..	..	..	..
Delhi	1	1	..	..	..	..
Himachal Pradesh	..	1	..	1	..	..
Pondicherry	25	25	2	5	1	6
total	1280	5247	404	2442	23	278*

\* In terms of K<sub>2</sub>O the consumption target should be 144,000 tons. The lower figure as compared to that given in paragraphs 10 and 22 is due to the fact that it does not take into account the consumption figures of other States for which information is not available.

1.5. Estimates for organic manures and green manuring during  
Third Plan

State/Union Territory	urban compost		rural compost		green manuring	
	1960-61	1965-66	1960-61	1965-66	1960-61	1965-66
	(000 tons)		(000 tons)		(000 acres)	
I	2	3	4	5	6	7
Andhra Pradesh	262	334	9439	12874	3200	4500
Assam .	8	16	800	900	200	1000
Bihar .	75	177	1000	7756	1095	3095
Gujarat .	118	318	246	371	10	100
Maharashtra .	342	447	459	1055	22	1022
Kerala .	22	55	94	269	250	1050
Madhya Pradesh	160	365	130	1960	50	2200
Madras .	400	600	1400	3000	3,000	6000
Mysore .	310	425	3000	5380	500	750
Orissa .	20	44	2340	13956	1200	7000
Punjab .	200	400	6100	8900	350	1350
Rajasthan .	444	968	887	269	130	630
Uttar Pradesh	580	750	56060	82340	650	9000
West Bengal .	40	100	500	7500	1000	3000
Jammu and Kashmir	..	15	75	100	..	10
Delhi .	5	40	..	..	2	30
Himachal Pradesh	..	..	120	220	28	78
Manipur .	..	..	20	35	..	3
Tripura	1	2	67	148	..	..
total .	2987	5056	82737	148033	11687	40818

## ANNEXURE II

Estimates of increase in agricultural production during Third Plan

## II.1. Foodgrains

(lakh tons)

State	1955-56	1958-59 (revised estimates)	1959-60 (final estimates)	1960-61 (anti- cipated)	addi- tional pro- duction in Third Plan	estima- ted pro- duction at the end of Third Plan	percen- tage increase during Third Plan
I	2	3	4	5	6	7	8
Andhra Pradesh	55.36	63.64	62.96	63.95	24.04	87.69	37.6
Assam	17.06	16.60	16.60	17.69	4.20	21.89	23.7
Bihar	51.84	68.76	59.39	62.62	20.27	82.89	32.4
Gujarat	72.55	89.28	75.07	21.16	8.31	29.47	39.3
Maharashtra				62.66	17.32	79.98	27.7
Kerala	8.87	9.65	10.55	10.42	4.00	14.42	38.4
Madhya Pradesh	76.17	92.85	90.31	90.74	16.68	107.42	18.4
Madras	45.38	49.25	50.96	51.72	16.54	68.26	32.0
Mysore	37.83	37.17	36.27	38.50	10.04	48.54	26.1
Orissa	24.63	24.52	24.47	40.00	16.15	56.15	46.5
Punjab	47.85	60.78	53.67	60.00	18.50	78.50	30.8
Rajasthan	41.75	50.93	47.26	50.35	16.00	66.35	31.8
Uttar Pradesh	118.86	133.99	131.82	135.39	47.45	182.84	35.1
West Bengal	49.73	45.26	46.15	52.24	14.49	66.73	27.8
Jammu and Kashmir	4.74	5.49	4.87	4.83	1.00	5.83	20.5
Union territories	5.32	6.86	7.15	7.15	1.05	8.20	14.7
total	657.94	755.03	717.50	769.42	236.05	1005.47	31.6

## Estimates of increase in agricultural production during Third Plan

## II.2 Cotton

State	(thousand bales)						
	1955-56	1958-59 (revised estimates)	1959-60 (final estimates)	1960-61 (anti- cipated)	additional production in Third Plan	estimated production at the end of Third Plan	percentage increase during Third Plan
I	2	3	4	5	6	7	8
Andhra Pradesh . . .	128	116	115	115	60	175	52.2
Assam . . . . .	9	6	9	9	5	14	55.6
Bihar . . . . .	2	1	1	6	..	6	..
Gujarat . . . . .	1921	2481	1533	1106	294	1400	26.6
Maharashtra } . . .				1207	328	1535	27.2
Kerala . . . . .	10	8	8	5	100	105	..
Madhya Pradesh . . .	403	380	279	567	184	751	32.5
Madras . . . . .	335	356	401	420	100	520	23.8
Mysore . . . . .	363	441	465	500	250	750	50.0
Orissa . . . . .	2	2	2	2	98	100	..
Punjab . . . . .	605	711	800	900	300	1200	33.3
Rajasthan . . . . .	184	145	148	200	152	352	76.0
Uttar Pradesh . . . .	29	34	67	54	96	150	177.8
Union Territories . .	7	5	7	7	..	7	..
total . . . . .	3998	4686	3835	5098	1967	7065	38.6

## II.3. Sugarcane (gur)

State	(thousand tons)						
	1955-56	1958-59 (revised estimates)	1959-60 (final estimates)	1960-61 (anti- cipated)	additional production in Third Plan	estimated production at the end of Third Plan	percentage increase during Third Plan
I	2	3	4	5	6	7	8
Andhra Pradesh . . .	517	661	627	627	123	750	19.6
Assam . . . . .	66	97	97	100	20	120	20.0
Bihar . . . . .	292	606	653	685	45	730	6.6
Gujarat . . . . .	553	800	927	98	31	129	31.6
Maharashtra } . . .				880	300	1180	34.1
Kerala . . . . .	133	35	36	37	30	67	81.0
Madhya Pradesh . . .	115	89	106	163	97	260	59.4
Madras . . . . .	335	384	409	400	101	501	25.3
Mysore . . . . .	290	392	384	413	97	510	23.5
Orissa . . . . .	92	73	73	100	130	230	130.0
Punjab . . . . .	556	725	857	780	120	900	15.4
Rajasthan . . . . .	45	42	60	90	90	180	100.0
Uttar Pradesh . . . .	2940	3076	3203	3500	700	4200	20.0
West Bengal . . . . .	131	117	128	128	59	187	46.1
Jammu and Kashmir . .	1	1	1	1	..	1	..
Union Territories . .	13	15	18	18	..	18	..
total . . . . .	5979	7113	7579	8020	1943	9963	24.2

## Estimates of increase in agricultural production during Third Plan

## II. 4. Oilseeds

(thousand tons)

State	1955-56	1958-59 (revised estimates)	1959-60 (final estimates)	1960-61 (anti- cipated)	additional production in Third Plan	estimated production at the end of Third Plan	per- centage increase during Third Plan
I	2	3	4	5	6	7	8
Andhra Pradesh .	1188	1109	1080	1079	558	1637	51.7
Assam . . .	56	66	44	60	20	80	33.3
Bihar . . .	56	78	66	60	66	126	110.0
Gujarat } Maharashtra }	1202 ..	1925 ..	1588 ..	1050 718	300 321	1350 1039	28.6 44.7
Kerala . . .	20	22	17	20	31	51	155.0
Madhya Pradesh	454	621	473	561	125	686	22.3
Madras . . .	870	939	945	1050	290	1340	27.6
Mysore . . .	503	574	580	700	175	875	25.0
Orissa . . .	65	54	54	90	110	200	122.2
Punjab . . .	149	186	165	185	115	300	62.2
Rajasthan . .	252	268	198	276	110	386	40.0
Uttar Pradesh .	765	996	1089	1180	495	1675	41.9
West Bengal .	49	55	39	40	20	60	52.0
Jammu and Kashmir	19	11	11	11	..	11	..
Union Territories .	4	3	3	4	..	4	..
total . . .	5643	6907	6352	7084	2736	9820	38.6

## II.5. Jute

(thousand bales)

Assam. . . .	1212	989	1114	813	400	1213	49.2
Bihar . . . .	589	1243	957	839	441	1280	52.6
Orissa . . . .	245	177	212	261	400	661	153.3
Uttar Pradesh .	89	95	92	89	30	119	33.7
West Bengal . .	2013	2596	2170	1987	840	2827	42.3
Tripura . . . .	50	58	60	41	40	81	97.6
total . . . . .	4198	5158	4605	4030	2151	6181	53.4



## CHAPTER XX

### COMMUNITY DEVELOPMENT

#### INTRODUCTION

WHEN the first set of community projects were taken up nearly nine years ago, community development was described as the method and rural extension as the agency through which the transformation of the social and economic life of villages was to be initiated. During the intervening years the tasks to be accomplished by the community development movement and the national priorities to be realised through it have come to be more precisely defined. At the same time, the concept of rural extension has broadened into that of Panchayati Raj, that is to say, the development of a set of interconnected democratic and popular institutions at the village, block and district levels in which the representatives of the people in the Village Panchayats, Panchayat Samitis and Zila Parishads and cooperative organisations function with the support and assistance of the various development agencies of Government working together as a team. One of the principal tasks in the Third Plan will be to ensure the growth and working of Panchayati Raj institutions so as to enable each area to realise its maximum development potential on the basis of local manpower and other resources, cooperative self-help and community effort, and effective use of the available resources and personnel.

#### REVIEW OF DEVELOPMENT

2. The community development programme now serves over 3,100 development blocks comprising about 370,000 villages. Of these, about 880 blocks have completed more than five years and entered the second stage of the community development programme. By October, 1963, the programme will extend over the entire rural area of the country. The total outlay on community development in the first two Plans has been about Rs. 240 crores. The Third Plan provides for a total outlay of Rs. 294 crores, in addition to about Rs. 28 crores for Panchayats.

3. In the course of the Second Plan, three important developments occurred in the community development programme. At the beginning of the Plan, work had been taken up in 950 development blocks of which about 370 were under the community projects scheme and about 580 under the national extension scheme. In the scheme of organisation prevailing at the time, every block was first taken up in the national extension service scheme, for which a programme budget of

Rs. 450,000 was allotted. After a period, which extended from one to two years, a proportion of the national extension projects were taken up under the community development scheme for which the budget allotment was Rs. 15 lakhs. In this way the national extension and community development aspects were regarded as related phases of the same programme. The review undertaken in 1957 by the Study Team set up by the Committee on Plan Projects, led to the adoption of a single scheme of community development which was spread over two stages, each of five years. The first stage envisages a block budget of Rs. 12 lakhs, and the second of Rs. 5 lakhs. With these changes it was also decided to extend the period for covering the entire rural area by three years, from October, 1960, to October, 1963.

4. The second major development concerns the introduction of Panchayati Raj. For many years, the establishment of democratic institutions at the district and block levels, in addition to panchayats at the village level, was felt to be an essential and inevitable step if rural development was to proceed not only rapidly but largely on the basis of local effort and resources. This approach was broadly indicated in the First Plan. The Second Plan clearly visualised a well organised democratic structure of administration within the district in which the village panchayat would be organically linked with popular organisations at higher levels. Pending further study, the Plan offered interim proposals for setting up district development councils and also development committees in the blocks. The recommendations of the Study Team set up by the Committee on Plan Projects in favour of a system of 'democratic decentralisation' were considered by the National Development Council in January, 1958. The Council emphasised that the foundation of any democratic structure had to be democracy in the village. The two institutions which made effective village democracy possible were the village panchayat and the village cooperative. The first step in any area should, therefore, be to establish the network of institutions needed at the village level. Democratic institutions at the district, block and village levels should be viewed as parts of one connected structure of development administration within the district. The Council, therefore, affirmed the objective of introducing democratic institutions at the district and block levels and suggested that each State should work out the structure which suited its conditions best. During the past three years, legislation for the introduction of Panchayati Raj has been enacted in Andhra Pradesh, Assam, Madras, Mysore, Orissa, Punjab and Rajasthan. In Madhya Pradesh and Uttar Pradesh legislation has been passed by the State Legislatures. In Bihar legislation is under consideration, and in Maharashtra and Gujarat proposals have been drawn up by special committees and their reports are being considered. These developments are the fruition of the general approach

which has been regarded for the past ten years as basic to rural development under democratic conditions and constitute a most significant step forward.

5. A third aspect of community development work which has assumed considerable importance is the proposal that, along with the district, the block should serve as a unit of planning and development. It was suggested that in the following fields proposals for the Third Plan should be drawn up by States on the basis of district and block plans:

- (1) agriculture, including minor irrigation, soil conservation, village forests, animal husbandry, dairying, etc.;
- (2) development of cooperatives;
- (3) village industries;
- (4) elementary education, specially provision of school buildings for local communities;
- (5) rural water supply and the programme of minimum rural amenities, including construction of approach roads linking each village to the nearest road or rail-head; and
- (6) works programmes for the fuller utilisation of manpower resources in rural areas.

Although efforts were made in several States to prepare block plans specially in agriculture, in the main, the plans of States have been prepared independently of local plans. The inference to be drawn from this is that much more effort will be needed before local plans can become a distinctive stage in the initial preparation of a Five Year Plan. In the present context of the Third Plan as formulated, what is important is that local plans should be worked out as a means for the more effective implementation of the State Plan.

6. Within the general framework of the district plan, the block plan is intended to include all social and economic activities undertaken within the block which call for (a) planning initiated locally at the block and village levels, and (b) coordination with the plans of various Departments which are implemented within the block. The following are the principal types of activities which will fall within the block plan:

- (i) items in the schematic budget of the community development block according to the stage reached;
- (ii) items included in the budgets of different Departments which can be executed through the block organisation;

- (iii) works undertaken by the local community or beneficiaries in accordance with the obligations laid down by law;
- (iv) works involving unskilled and semi-skilled labour undertaken in the block; and
- (v) other activities undertaken in the block or by the block organisation with a view to securing greater contribution from local communities in respect of development schemes in different fields.

7. The three aspects described above, namely, the extension functions of the community development organisation, introduction of democratic institutions, and the preparation and implementation of area and village plans, are closely related. For carrying out extension activities, each development block has a body of village level workers and a team of technical specialists in agriculture, animal husbandry, cooperation, rural industries and other fields functioning together under the leadership of the Block Development Officer. Supported and guided by senior specialists at the district level, these extension cadres serve the Panchayat Samitis in the block and Panchayats and Gram Sabhas in the villages. They have to assist the elected representatives in preparing and implementing technically sound block and village plans on the basis of the widest possible participation on the part of local communities and the maximum use of local manpower and other resources.

#### AGRICULTURAL EXTENSION

8. The principal extension functions entrusted to the community development organisation fall within the fields of agriculture, animal husbandry, cooperation and rural industries. It is to these that village level workers are expected to devote the bulk of their time and energy. In the Third Plan, the tasks to be accomplished in the fields of agriculture and cooperation are of formidable dimension. Agricultural production has to be raised by about 30 per cent, and large programmes of minor irrigation, utilisation of irrigation from both large and small irrigation schemes, soil conservation and dry farming, application of fertilisers and development of local manurial resources have to be carried out in the blocks. The programme for cooperation envisages a threefold increase in agricultural credit through cooperative agencies. Increase in agricultural production can only be achieved with the most intensive effort that can be organised at the village level. Increase in cooperative credit also demands the strengthening of the cooperative movement at the base, bringing all families in the village into the cooperative, and ensuring that credit is linked both with production and with marketing. Thus, the basic problem in the rebuilding of the rural economy at present is the organisation of the agricultural effort at the village level. In the measure in

which progress is achieved in mobilising the village community for increasing production, every other problem in the rural areas becomes easier of solution and more intensive development can be undertaken in other directions, specially rural industry and the provision of social services. The growth of agricultural production is of such critical importance that, in the immediate context of the Third Plan, the principal test to be met by the community development movement must be its practical effectiveness as an agricultural extension agency. It is, therefore, essential for the community development organisation to take all steps necessary to strengthen itself in this respect, and to accept responsibility for achieving the targets of agricultural production on the basis of the largest possible local effort. At the same time, it is incumbent on the Agriculture Departments and other Departments concerned with agricultural production that they must place at the disposal of the community development organisation at the district and block levels, the necessary expert supervision and guidance and the supplies, trained manpower and other resources needed.

#### VILLAGE PRODUCTION PLANS

9. The principal means for involving all cultivators in the village in the agricultural effort and mobilising effectively the resources of the local community is the village production plan. The main elements in agricultural production programme at the village level are:

- (i) full utilisation of irrigation facilities, including maintenance of field channels in good condition by the beneficiaries, repairs and maintenance of community irrigation works and economy in the use of water;
- (ii) increase in the area under multiple cropping;
- (iii) multiplication in the village of improved seed and its distribution to all cultivators;
- (iv) supply of fertilisers;
- (v) programme for composting and green manures;
- (vi) adoption of improved agricultural practices, such as, soil conservation, contour-bunding, dry farming, drainage, land reclamation, plant protection, etc.;
- (vii) programme for new minor irrigation works to be undertaken in the village, both through community participation and on an individual basis;
- (viii) programme for the introduction of improved agricultural implements;
- (ix) programme for increasing the production of vegetables and fruits;

- (x) programme for the development of poultry, fish and dairy products;
- (xi) animal husbandry, e.g. maintenance of stud bulls and castration of scrub bulls, etc.; and
- (xii) programme for the development of the village fuel plantations and pastures.

10. The village production plan includes two main groups of programmes, namely; (a) supply of credit, fertilisers, improved seed, assistance for plant protection, minor irrigation, etc. for which a measure of assistance has to come from outside the village, and (b) programmes such as the digging of field channels for utilising irrigation from large projects, maintenance of bunds and field channels, contour bunding, digging and maintenance of village tanks, development and utilisation of local manurial resources, village fuel plantations, etc. which call for effort on the part of the village community or the beneficiaries. The success of the village production plan will largely depend on the efficient organisation of supplies, credit, etc. and the quality of the technical advice given by extension workers. In the measure in which these services are provided, there will be greater enthusiasm and cooperation from the village community in the second group of programmes mentioned above. In June, 1960, the Ministry of Community Development and Cooperation forwarded proposals to State Governments on these lines, and a number of States have since issued similar instructions. It cannot, however, be said that village production plans are yet established as a normal method of work in agricultural development or that the various practical problems involved have been resolved. In the field of extension, by far the most important task to be undertaken in pursuance of the Third Plan is to give effect to the idea of working out village production plans so as to draw all the cultivators into the common effort and, at the same time, to make available to individual farmers in an efficient and organised manner the credit, supplies and other assistance needed. The Third Plan devotes considerable resources to minor irrigation and soil conservation, supplies of fertilisers on a large scale have been assured, and resources have been provided for plant protection, improved agricultural implements and other schemes. The programme for setting up seed farms is in an advanced stage and it should now be somewhat easier to arrange for the multiplication in the village of the quantities of improved seed required. Thus, the Third Plan provides for the various factors required for the successful execution of village production plans.

#### PANCHAYATI RAJ

11. The establishment of democratic institutions at the district and block levels and the role assigned to the Gram Sabha and the Village Panchayat constitute fundamental and far-reaching changes in the structure of district administration and in the pattern of rural development.

Their significance lies in the fact that, subject to guidance and supervision by the State Government, the responsibility for the implementation of rural development programmes will now belong to the Block Panchayat Samiti working with Panchayats in the villages and the Zila Parishad at the district level. These institutions have not been at work long enough to permit more than a preliminary statement of the problems which are likely to require careful attention. In considering these, certain aspects deserve to be stressed. The primary object of Panchayati Raj is to enable the people of each area to achieve intensive and continuous development in the interest of the entire population. The elected representatives should be encouraged to value the development of Panchayati Raj as offering new avenues of service to the people rather than opportunities for the exercise of authority. The concept of Panchayati Raj is not limited to the non-official and democratic organisations associated with it. Representing, as it does, a distinct level of responsibility and functions within the general scheme of administration, Panchayati Raj comprehends both the democratic institutions and the extension services through which development programmes are executed. Extension personnel at the block and village levels, although functioning within the jurisdiction of the Panchayat Samiti, form part of a larger administrative and technical network, which extends to the district and even beyond it. It is vital to the permanent success of Panchayati Raj that the integrity of the structure of technical and administrative services provided by Government and their ability to fulfil the duties and responsibilities cast upon them should be fully ensured, while their knowledge and experience are made available to the elected bodies at the district and block levels. It is also of the highest importance that there should be clear recognition of the distinct role of federal cooperative organisations functioning at the State and district levels, as in the field of banking, marketing, processing, distribution and education and training. Large obligations are undertaken by various cooperative organisations and they should be enabled to fulfil them in accordance with the approach and principles of the cooperative movement. The economic development of rural areas is still in its beginnings and large possibilities lie ahead. It is the object of the new institutions and relationships now being established to help each area to realise these possibilities to the utmost limits of its resources. From this aspect the following are among the main tests by which the success of Panchayati Raj will need to be measured from time to time:

- (1) agricultural production as the highest national priority during the Third Plan;
- (2) development of rural industry;
- (3) development of cooperative institutions;
- (4) full utilisation of the local manpower and other resources;

- (5) development of facilities for education and adult literacy;
- (6) optimum utilisation of resources available to Panchayati Raj institutions such as finance, personnel, technical assistance and other facilities from higher levels, and efforts by them to raise their own resources;
- (7) assistance to the economically weaker sections of the village community;
- (8) progressive dispersal of authority and initiative with special emphasis on the role of voluntary organisations;
- (9) understanding and harmony between elected representatives and public servants to be achieved through comprehensive training in education and a clear demarcation of duties and responsibilities, and progressive increase in competence both among officials and non officials; and
- (10) cohesion and mutual self-help within the community.

12. From the limited experience gained so far, the following suggestions are offered for ensuring the effective and successful working of Panchayati Raj institutions:

- (1) while developing institutions at the higher levels, the greatest stress should continue to be laid on the work of the Gram Sabha and the Panchayat at the village level. It is at the village level that the efforts of the people have to be mobilised and there is the largest scope for securing community action. Both on the part of the Gram Sabha and the Village Panchayat the approach of unanimity or near unanimity should be encouraged, so that various activities are undertaken with the general consent and goodwill of the community.
- (2) technical officers at the district level should endeavour to make their advice and assistance available to extension officers at the block level and to the Panchayat Samitis for the initial preparation of programmes and schemes before decisions are taken. In turn, Panchayat Samitis should seek and welcome such assistance since a considerable proportion of extension personnel at the block level are necessarily without adequate experience, but can render better service if they receive the necessary guidance and help from officials at the district level.
- (3) the manner in which the block extension team, comprising the Block Development Officer and Extension Officers in different fields of development, functions is of the highest importance for the success of Panchayati Raj. To assist



the Panchayat Samiti effectively, these officials must continue to function as a team, the Block Development Officer providing the necessary co-ordination and leadership, and Extension Officers in different fields participating actively in formulating programmes and schemes for the consideration of the Panchayat Samiti and its Standing Committees, executing them impartially in accordance with the rules, and ensuring that the supplies and services needed are organised efficiently. Adequate supervision over the work of the village level workers is essential. Care should be taken to see that the Block Development Officer and the Extension Officers undertake extensive touring within the block and are not tied up excessively with discussions at headquarters.

- (4) in the work of Panchayat Samitis, the main stress should be on the preparation and implementation of carefully considered block plans. These, along with village plans, provide the essential means for securing intensive and continuous development. Block and village plans, which are technically well-conceived, will go a long way to counteract adverse decisions and local pressures.
- (5) the introduction of Panchayati Raj enhances greatly the responsibility of the technical departments at the State level. They should transmit the best guidance and experience available in each field of development, provide for adequate training programmes for the elected representatives, and assist them generally in fulfilling the onerous responsibilities which Panchayati Raj places on them.
- (6) the Collector of the district will continue to have a large share of responsibility in facilitating the success of Panchayati Raj institutions. He has the duty of ensuring coordination at the district level between the Zila Parishad and the technical officers in different fields, close contacts between the latter and the Panchayat Samitis and Extension Officers at the block level, and a continuing flow of technical advice and guidance from departments at the State level. An important aspect of the Collector's work will be to assist democratic institutions and the public services in developing the right conventions in day-to-day work and in administrative relationship based on recognition of their distinctive contribution in fulfilling common objectives.

13. For the effective implementation of the programme of community development, several technical Departments have to work together in a coordinated manner. If the vast majority of cultivators are to be assisted

to utilise the results of research and to practise scientific agriculture, adequate assistance in the form of technical advice and supplies of improved implements, seeds, fertilisers and credit must reach them at the right time. It is essential for the success of these complex but vital programmes that the responsibility of all official agencies and organisations concerned should be properly defined and there should be no ambiguity in the responsibility of the higher technical officers to provide the necessary guidance and supervision. In other words, in these matters, an uninterrupted line of responsibility reaching down to the village units should be assured.

While the responsibility of the official agency is defined and enforced as above, the functions of non-official leaders should be:

- (i) to mobilise public participation and promote the acceptance of programmes by the people;
- (ii) to assist village panchayats and cooperatives in their work;
- (iii) to assist in training programmes for village leaders and others;
- (iv) to organise programmes for the benefit of the community, using local man-power resources; and
- (v) to promote the welfare of the weaker sections.

#### RATIONALISATION OF DISTRICT ADMINISTRATION

14. The introduction of Panchayati Raj raises the wider question of the reorganisation of district administration. It is not generally realised that over the past decade changes in district administration have been somewhat haphazard. When the community development programme was taken up, the extension organisation had to be super-imposed on the traditional district administration without adequate connecting links. The consequence is that in many districts the following organisations are working on parallel lines with their activities largely uncoordinated;

- (i) the revenue administration which looks after certain specified development functions, such as taccavi advances, recoveries, etc.;
- (ii) the established Development Departments at the district, taluka and other levels;
- (iii) the community development organisation with block officers and village level workers, linked at the village level with panchayats and cooperatives; and
- (iv) Local Boards (where these have not yet been abolished).

With the introduction of Panchayati Raj, the functions of Panchayat Samitis include both community development activities and several activities hitherto entrusted to Local Boards. In the nature of things, there is

still considerable overlapping which calls for some measure of rationalisation in district administration and fresh definition of functions and relationships.

#### WEAKER SECTIONS AND THE PROBLEM OF EMPLOYMENT

15. From time to time evaluation reports on the community development programme have drawn attention to the fact that the benefits did not reach the less privileged sections of the village community in adequate measure. Recent studies report a degree of improvement in this respect. A study group set up by the Ministry of Community Development and Cooperation is at present engaged in considering how far and in what manner the community development programme can promote the economic development and welfare of the weaker sections of the community. The problem should be seen in the broader context of development within the rural economy. The welfare of weaker sections is closely related to that of the village community as a whole, and in a sense a large part of the village community consists of those who may be described as being economically weak. The main weaknesses of the present village economy are low income, low productivity and lack of continuous employment. Without the rural economy as a whole growing rapidly enough, it is difficult to solve the problem either of the community in the village or of its weaker sections. The essential aim must be to bring about a more productive agricultural economy and a larger range of non-agricultural occupations in the village so as to increase production and employment and, at the same time, much greater attention should be given in all activities to the needs of the less privileged sections.

16. In the efforts which have been made over the past three years to secure greater coordination between the community development and Gramdan movements, their common objectives have been emphasised. These include the acceptance by the village community of responsibility for the welfare, employment and livelihood of all its members. This is of the greatest importance from the point of view of the weaker sections in the village.

17. The block organisation can render useful service by assisting the implementation of the land reform legislation which has been already enacted by creating public opinion and educating the people in their rights and obligations. Other measures which the block organisation can take to the immediate advantage of the weaker sections of the population are to increase subsidiary employment in the villages, raise the productivity of village industries and of village artisans, organise labour cooperatives, and promote the fullest possible utilisation of the manpower resources of the area. The programme of rural works leading to employment opportunities by the last year of the Third Plan for about 2.5 million persons,

specially during the slack agricultural seasons, will be implemented to a large extent through community development organisations. The programme will be extended first to areas with heavy pressure of population and considerable under-employment, and later to other areas. This programme should afford an opportunity of the highest value not only for providing additional employment, but also for implementing the community development programme with fresh emphasis on the maximum possible utilisation of local manpower resources and effort and participation on the part of local communities.

## CHAPTER XXI

### ANIMAL HUSBANDRY, DAIRYING AND FISHERIES

THE need for expanding the production of supplementary and subsidiary foods, especially proteins, has been increasingly realised in recent years. The demand for these articles has speedily increased and, with rise in incomes, is likely to increase even more rapidly in the future. The prospects of augmenting the supply of milk and milk products, table birds, eggs and meat depend ultimately on progress in the development of animal husbandry. In the development of fisheries significant results have already been achieved, but still a vast potential remains to be tapped.

#### ANIMAL HUSBANDRY

2. Development of animal husbandry is envisaged as an integral part of a sound system of diversified agriculture. Emphasis will be laid on mixed farming, a system in which crop production and animal husbandry are dovetailed for efficient and economic utilisation of land, labour and capital. The integration of farming with animal husbandry is essential for the fuller utilisation of farm bye-products, maintenance of soil fertility, fuller employment for agriculturists throughout the year and increase in rural incomes.

3. According to the 1956 Livestock Census, there were 306 million farm animals. Of these, cattle numbered about 159 million and buffaloes about 45 million, constituting together a fourth of the world's bovine population. There were, in addition, 39 million sheep, 55 million goats, 8 million other animals and 95 million poultry. The productivity of India's livestock is generally low. Although high individual yields of milk are realised in some breeds of cattle and there is evidence of a slight increase, India's average yields continue to be extremely small. Thus, the average milk yield per lactation of cows is in the neighbourhood of 400 lb and of buffaloes a little above 1100 lb compared to about 5000 lb or more in advanced western countries. The total production of milk which was estimated at about 17 million tons in 1951 and at about 19 million tons in 1956, is at present reckoned at about 22 million tons. By the end of the Third Plan it is expected to go up to about 25 million tons. Statistics of milk consumption are far from satisfactory. The average per capita consumption of milk, including milk products, was estimated in 1951 to be 4.76 oz per day and is now placed at about 4.9 oz per day. There were wide variations between States, consumption in Punjab, Rajas-

than, Himachal Pradesh and Uttar Pradesh being at relatively higher levels than in other parts of the country. At the end of the Third Plan, the per capita consumption is expected to rise to 5.1 oz per day. For a balanced diet, the minimum requirement is considered to be about 10 oz per day, so that the levels of consumption at present visualised are wholly inadequate.

#### REVIEW OF PROGRESS

4. During the First Plan among the animal husbandry programmes undertaken were the establishment of 146 key village blocks with artificial insemination centres and 25 gosadans. A pilot scheme for the eradication of rinderpest was also initiated. During the Second Plan 196 new key village blocks were taken up and 114 key village blocks established in the First Plan were expanded. Key village blocks set up in the First Plan comprised 4 separate units and those set up in the Second Plan included 6 units. In all, by the end of the Second Plan about 2000 key village units were established. By 1960, 670 artificial insemination centres had been set up. During the Second Plan 34 more gosadans were established and 246 goshalas were selected for development. By the end of Second Plan about 4000 veterinary hospitals and dispensaries had been established of which, 650 were set up during the First Plan and about 1900 during the Second Plan. In the Second Plan the gosadan scheme was modified so as to allow for the setting up of gosadans both by State Governments and by private institutions. With a view to reducing losses, it was proposed that charmalayas should be provided at gosadans with equipment and machinery for flaying and curing of hides and utilisation of carcasses. The total Plan outlay on animal husbandry in the First Plan was Rs. 8 crores and in the Second about Rs. 21 crores.

#### PROGRAMMES IN THE THIRD PLAN

5. Development of animal husbandry during the first two Plans suffered under several limitations. Some of these were of a continuing nature, such as the large proportion of uneconomic and surplus cattle, deficient nutrition and shortage of breeding bulls. A proportion of the key village blocks were located in "non-descript" areas, outside the established breeding tracts. There was also shortage of trained personnel in several States. In the Third Plan, which provides about Rs. 54 crores for animal husbandry, the key village programme is being reorganised so as to provide for about 10 units in each block and establishment of central artificial insemination centres. The programme for rinderpest is to be intensified and a large castration programme is proposed to be taken up.

6. *Breeding.*—As was stated in the Second Plan, there are 25 well-defined breeds of cattle and 6 well-defined breeds of buffaloes in India. These are distributed in different parts of the country. Each breed of

cattle has a limited number of high class specimens. A few of the breeds are of the dairy type, in which the females yield a large quantity of milk while the bullocks are not of high quality. A large majority of the breeds, however, are of the draught type, in which the cows are poor milkers, but the bullocks are superior in quality. In between, there are a number of breeds which may be described as "dual purpose", in which the females yield more than an average quantity of milk, while the male are good working bullocks. These well-defined breeds are found in the dry parts of the country. Outside these areas, over large parts of the country, specially in the east and the south, the cattle are "non-descript" and do not belong to any defined breed. The all-India breeding policy drawn up by the Indian Council of Agricultural Research and accepted by the Central and State Governments envisages that in the case of well-defined milch breeds the milking capacity should be developed to the maximum by selective breeding and the male progeny should be used for the development of 'non-descript' cattle. In the case of well-defined draught breeds, the aim is to put as much milk into them as possible without materially impairing their quality for work. The breeding policy is, thus, to evolve and develop "dual purpose" breeds, which will provide both good bullocks for efficient cultivation and increased quantities of milk for human consumption. Besides pursuing these objectives during the Third Plan, as an experimental measure, it is proposed to undertake cross-breeding with exotic breeds in regions of high altitude which have heavy rainfall. To meet the requirements of imported stock, it is proposed to set up a farm for maintaining a nucleus herd of Jersey animals.

7. The key village scheme, which has been the main programme for intensive cattle development during the first two Plans, has been recently re-examined by an expert committee. The committee has suggested that State Governments should review the operation of the key village blocks with a view to improving their working and closing down such of the blocks as have not produced satisfactory results. To overcome the shortage of high class bulls, it has been recommended that State Governments should formulate well-considered purchase programmes, and progeny testing programmes should be taken up at Government farms as well as at private farms where the necessary facilities exist or can be provided. To achieve satisfactory breeding control in the key village areas, it is proposed that the castration programme should be intensified and propaganda undertaken in favour of early castration of males. It is also proposed that the programme for the rearing of bull calves in the key village areas should be expanded. The committee has drawn attention to the fact that the feed and fodder development programme associated with the key village programme has not made satisfactory progress. To remove this defect, the committee has made a number of recommendations, including better use of the existing fodder resources, control of grazing

where pastures have been developed, cultivation of fodder crops on marginal and sub-marginal lands, introduction of suitable leguminous crops in rotation with paddy, construction of silo pits and popularisation among farmers of cultivation of pasture grasses and feeding of balanced rations. The need to organise the marketing of livestock and livestock products through cooperative marketing societies of cattle-owners has been stressed. The committee has also made a number of proposals for improving existing arrangements concerning artificial insemination.

8. A scheme for the progeny testing of bulls required for key village areas and cattle farms was initiated during the Second Plan with the Haryana breed of cattle and the Murrah breed of buffalo. Eventually, it is proposed that such progeny testing scheme should be introduced for each of the important breeds. The scheme is being extended to the Ongole breed in Andhra Pradesh and the Kankrej breed in Gujarat.

9. Registration of cattle conforming to certain prescribed standards is an important means for securing cattle improvement. It is proposed that in the main breeding tracts cultivators should be encouraged to form breeding societies which will provide for registration of cattle and recording of milk yields and will serve as a source of supply of breeding bulls required for other areas. During the Third Plan, this scheme will concentrate on the Haryana, Gir and Ongole breeds of cattle and the Murrah breed of buffaloes.

10. The shortage of breeding bulls has been one of the principal handicaps in implementing animal husbandry programmes. To overcome this difficulty, the use of artificial insemination is being rapidly extended. There are at present 125 Government cattle breeding farms, but the total production of bulls is in the neighbourhood of about 5000, which is but a fraction of the numbers actually needed. The Third Plan provides for the setting up of 11 bull-rearing farms in the breeding tracts. It also provides for subsidising the rearing of about 30,000 bull calves. This scheme can be considerably expanded if adequate facilities are made available to village panchayats and to cattle-breeding cooperatives. It is also proposed to expand the herds at 33 existing Government cattle breeding farms and improve their management, so that they can produce a larger number of superior bulls. A number of new livestock farms are also to be established. In the hill areas, livestock development has generally lagged behind. These areas, however, offer scope for cross-breeding with exotic breeds. It is proposed to establish an exotic breeding farm for producing bulls for the development of hill cattle. A difficult problem in the major breeding areas is presented by continuing exports of high-yielding animals to large cities, where they are discarded after one or two lactation periods. Measures are being devised for preventing this national loss.



11. *Feeding and nutrition.*—Increase in numbers accompanied by inadequate feeding and deficiencies in nutrition are responsible to a large extent for deterioration in the quality of livestock. Development of grazing areas, increased production of fodder, improved arrangements for preserving it and better utilisation of agricultural by-products are therefore, important aspects of animal husbandry development. Among the measures proposed in the Third Plan are work on forage improvement at livestock farms, establishment of forage demonstration plots in villages, distribution of planting materials, conservation of surplus fodder through ensilaging, feeding of selected cattle on balanced rations, adoption of improved cultural practices and establishment of fodder demonstration-cum-training centres. In periods of scarcity fodder banks have considerable value. One such bank was established during the Second Plan. It is proposed to set up two more fodder banks during the Third Plan. It is also proposed to set up a Forage and Grassland Research Institute. Suitable areas will be selected for the development of mixed farming, preference being given to river valley areas and others in which successful livestock development has already taken place. In these areas, fodder and leguminous forage crops will be grown in rotation with food and cash crops, financial assistance will be given for the purchase of 'dual purpose' cattle of high quality, and forage seed farms as well as demonstration centres will be set up.

12. *Surplus cattle.*—The seriousness of the problem of surplus and uneconomic cattle is widely recognised, although estimates of the numbers of such cattle vary. As was pointed out in the Second Plan, large numbers lead to poor feeding and poor feeding comes in the way of attempts to raise productivity. Weeding of inferior stock is a necessary complement to a programme of cattle improvement and systematic breeding. The gosadan scheme, which was worked out by the Cattle Preservation and Development Committee in 1948, was introduced as a partial answer to this problem. The scheme envisages segregation of useless cattle so as to avoid their further multiplication and the resultant damage to crops. Over the past ten years 59 gosadans have been established, 25 during the First Plan and 34 during the Second Plan. In the Third Plan, it is proposed to set up 23 more gosadans. In its very nature, the programme for establishing gosadans presents certain difficulties, the most important of these being the non-availability of suitable sites in the interior of forest areas where the necessary grazing facilities are available. The scheme has been modified from time to time with a view to making gosadans a more economic proposition. In this connection, the need for providing facilities for the full utilisation of hides, bones, horns, etc. has been stressed and attempts have been made to reduce overhead costs.

An aspect of the problem of surplus cattle is the menace of wild and stray animals. During the Second Plan, a scheme for catching, taming and disposing of wild and stray cattle was initiated as part of the gosadan programme. The scheme is in operation in Delhi, Jammu and Kashmir, Madhya Pradesh, Punjab and Uttar Pradesh.

Having regard to the size of the problem of surplus cattle and its special features, with a view to elimination of scrub male stock, it is proposed to undertake a large-scale programme of castration during the Third Plan. The programme envisages that mass castration work will be initiated first in areas in which intensive livestock development programmes have been taken up and will be later extended to other areas.

13. *Extension of veterinary facilities and disease control.*—In the course of the Third Plan the number of veterinary hospitals and dispensaries is expected to increase to 8000 and every development block will have at least one such hospital or dispensary. There will also be increased production of vaccines and sera required for the control of contagious diseases. Under the programme for eradication of rinderpest carried out during the Second Plan, about 90 million heads of cattle have been protected, leaving a balance of about 41 million cattle. It is expected that by 1963-64, the entire bovine population of the country will have been vaccinated. It is proposed to undertake a "follow up" programme to set up immune belts along the border and to establish 10 more quarantine stations at important points of entry of animals, bringing the total number to 28.

14. *Piggery Development.*—Piggery products provide cheaper animal proteins and are important for improving the nutritional requirements. Bristles as by-products are valuable export commodities. In the Second Plan 13 piggery breeding units for the production of breeding boars for use in piggery development blocks were set up. With a view to utilising breeding materials from these units 28 piggery development blocks were also established. In addition, two regional pig-breeding stations-cum-bacon factories were established at Aligarh in Uttar Pradesh and at Haringhata in West Bengal. The Third Plan provides for piggery development on a larger scale. It is proposed to establish two regional breeding-cum-bacon factories, 12 piggery units and 140 piggery development blocks. Intensive development in this industry can make a material contribution towards raising the economic levels of several groups among the weaker sections of the village community.

15. *Equine breeding.*—Before partition, the requirements of the armed forces for horses, mules, etc. were met, for the most part from special breeding schemes sponsored by the Government in the canal colonies, and were also supplemented to some extent by imports from

abroad. Despite progress in mechanisation, there is still a considerable demand for horses and mules for mountain artillery, animal transport companies and for pack transport etc. for use in the mountainous regions. These requirements, together with those of the Police, are being met from the 'unbound' system still prevailing in some districts of Uttar Pradesh and Punjab and partly through imports.

The policy of preserving the existing breeds and the objective of establishing a breed of Indian horses have resulted in evolving the 'Indian Thoroughbred' which has good speed, stamina, patience, persistence and easy gait, and is now in considerable demand by the turf clubs, Except Kathiawari and Marwari breeds, no serious attempts have been made to improve other breeds such as Bhutia, Manipuri, Spiti and Shahabadi etc. No systematic efforts were made for improving and developing the breeds of horses during the First and Second Plans. During the Third Plan a horse-breeding farm will be established and will maintain 48 mares and 2 stallions and 20 donkeys and 5 donkey stallions. The farm will produce 12 horse stallions and 6 donkey stallions every year. This stock will be located at 10 selected stud centres for the improvement of local breeds. It has also been agreed to import a limited number of horses for the next four years. Other aspects of the programme for horse-breeding, such as the establishment of a national stud, cooperative breeding schemes and the proposal for more private studs are under examination.

16. *Sheep and wool development.*—Of the 72 million lb. of wool produced in the country, about one-half is exported as carpet wool, while 15 to 17 million lb. of semi-processed wool is imported. In 1959-60 the export of wool and of sheep and sheep products contributed Rs. 26.6 crores in foreign exchange, while the cost of imported wool amounted to Rs. 8.8 crores. The export value of sheep and sheep products is estimated to increase to about Rs. 35 crores by the end of the Third Plan. During the Second Plan 4 sheep breeding farms for the production of superior rams were started. Rams were distributed to 305 sheep and wool extension centres in the established breeding tracts for the improvement of local stock. In addition to providing breeding facilities these centres also demonstrate improved methods of shearing, grading and marketing. In the Third Plan 15 sheep breeding farms will be established and 17 farms expanded. In all 2000 to 2500 quality rams will be supplied from these farms to flock owners in the rural areas. As a result of various measures, the production of wool by the end of the Third Plan is expected to go up to about 90 million lb. In view of the greater demand by indigenous industry for quality wools, a large programme for correct shearing as well as systematic grading is to be taken up in Rajasthan. The plans of some States provide for loans for the introduction of sheep with a view to the development of mixed farming.

17. *Poultry development.*—Together with piggery, poultry has employment potentialities both in the rural and urban areas, particularly for the weaker sections of the community. However, the poultry industry in India is essentially a cottage industry without being linked with commercial hatcheries, commercial feed industry and organised marketing of poultry products. During the Second Plan 5 regional poultry farms were established and equipped for the production of superior birds for breeding purposes. These regional farms distributed chicks to State poultry farms, extension centres and poultry breeders. During the Second Plan 269 poultry extension centres were also established. The Third Plan provides for the expansion of 60 State poultry farms, 3 regional poultry farms and 50 extension-cum-development centres. Each poultry development centre has also a demonstration unit of 100 birds, with an egg defertilisation unit for demonstrating modern methods of poultry keeping to the farmers. Commercial hatcheries will be set up in these centres. It is expected that as a result of these measures the annual average egg production will go up from 60 to 70 eggs per hen. Two regional duck breeding farms, 17 duck extension centres, one egg powder factory and 15 centres for the manufacture of poultry feeds are also proposed to be established.

18. *Marketing.*—In the interest of breeding good quality livestock, it is essential to improve the existing arrangements for the marketing of livestock and livestock products. This is an aspect of development which has hitherto received little attention. Trade practices need to be regulated and amenities such as arrangements for shelter and water for animals should be provided in market yards. Facilities for giving authentic information to breeders regarding prices and marketing prospects are at present quite unsatisfactory. There should be a programme for marketing of livestock and livestock products in each State and especially in the key-village blocks. Schemes for correct shearing, grading and marketing of wool are of considerable importance. The plans of States also include schemes for demonstrations and propaganda regarding correct methods of flaying and utilisation of carcasses. A number of States have made specific provisions for improving slaughter houses, development of meat markets and in some cases setting up of abattoirs run on hygienic lines.

19. *Hide flaying, curing and carcass utilisation.*—Due to the absence of a sufficient number of modern slaughter houses and abattoirs, a large proportion of hides produced in the country are of 'fallen' type which are inferior in quality as compared to those from the slaughter houses. There is also lack of facilities for proper flaying and scientific curing with the result that the hides and skins produced in the country are inferior in quality and fetch lower prices in the international market.

Exports of hides and skins are expected to go up from Rs. 28 crores in 1960-61 to Rs. 34 crores in 1965-66. Pressure on quality supplies is increasing from the indigenous leather manufacturers. In this connection the main problems are the scattered sources from which carcasses are to be collected and the fact that local flayers have tended to give up the age-old profession. This calls for a large scale programme for the better collection of fallen hides and for improved flaying. The prerequisites for such a programme are :

- (i) timely recovery of carcasses and full utilisation of all by-products such as meat, bones, tallow, horns, etc.;
- (ii) tanning of hides and skins by improved methods under the guidance of trained personnel; and
- (iii) provision of adequate training facilities at selected centres.

In the Third Plan it is proposed to set up one large and 14 small hide flaying, curing and carcass utilisation centres, and 2 mobile bone crushing units. A regional training centre in hide flaying, curing and utilisation will also be established.

20. *Cattle insurance.*—Sometime the farmers suffer considerable losses due to the death of their draught or milch animals when there is an out-break of epidemic. A beginning has been made by the Cooperative Mutual Insurance Company, Bombay to insure milch animals and draught cattle in the States of Maharashtra and Gujarat. The Government of Kerala has also shown interest in such a scheme. Schemes to investigate the possibilities of cattle insurance have been proposed by Andhra Pradesh, Uttar Pradesh, Maharashtra, Rajasthan, Mysore, Madras and Punjab.

21. *Other schemes.*—Cattle development activities are proposed to be intensified through private institutions such as goshalas. In the Second Plan, 246 selected goshalas were taken up for the production of superior bulls, which will be further distributed for breeding purposes, and also for increasing the production of milk. It is proposed to provide 168 more goshalas with financial and technical assistance to convert them into cattle breeding-cum-milk production units.

There are traditional nomadic cattle breeders in some parts who maintain good specimens of certain breeds of cattle. There is need for improving the economic conditions of these professional herdsmen to continue their age old profession to develop and improve the herds, so that good genetic material available with them might be used for development in non-descript areas. In the Second Plan the scheme for the rehabilitation of nomadic cattle breeders was taken up in Andhra

Pradesh, the former Bombay State, U.P. and Rajasthan. Provision has also been made for the development of Rathi and Tharparkar breeds of cattle maintained by the nomadic cattle breeders of Rajasthan.

22. *Central Council of Gosamvardhana.*—With a view to associating private institutions and organisations which are already engaged in cattle development, particularly the cow, the Central Council of Gosamvardhana was reorganised in 1960. The Council has been assigned specific functions such as to organise, implement and coordinate activities relating to the preservation and development of cattle and to administer schemes for increasing milk yield and improving draught quality. The Council will also run training centres for goshala and charmalaya workers; organise exhibitions and issue journals, films and pamphlets for field workers. The Central Council of Gosamvardhana is also expected to bring about better coordination between various agencies interested in Gosamvardhana work.

23. *Education and research.*—Educational programmes were developed to a considerable extent in the Second Plan with the establishment of three new veterinary colleges and the expansion of five colleges out of the 14 existing ones. In addition to the post-graduate college established at the Indian Veterinary Research Institute, Izatnagar, four veterinary colleges at Mathura, Madras, Bombay and Patna were upgraded for imparting post-graduate training. In the Third Plan, two new veterinary colleges will be opened, one in Gujarat and the other in Bihar. An extension wing is proposed to be attached to each college to provide adequate training in extension methods pertaining to animal husbandry. The estimated demand for 5000 veterinary graduates during the Second Plan has been largely met. The requirements of veterinary graduates during the Third Plan period are estimated at 6800 as against the output of about 5800 from the existing colleges. Thus, there will be a gap of 1000 veterinary graduates to be covered. It is felt that with the fuller use of the existing institutions together with the establishment of two new veterinary colleges during the Plan period, requirements of veterinary graduates would be adequately met. Arrangements will also be made to train about 70,000 stockmen, which will meet the requirements of the Third Plan.

In order to undertake fundamental and other studies in sheep and wool production, a Central Sheep Breeding Research Institute will be established in Rajasthan with two sub-stations, one in the hill region of Punjab and the other in the Nilgiris. Basic aspects concerning the utilisation of land in relation to breeding of different types of sheep, problems of hybridisation for high production, trials of imported breeds and nutrition in relation to production would be investigated at this institute. This

Institute will also deal with the problem of wool technology in relation to production and processing. The function of the sub-station would be to undertake experimental breeding for raising acclimatised strains of imported sheep breeds obtained from temperate climates.

### DAIRYING AND MILK SUPPLY

24. The dairy industry in India is faced with several problems, such as, scattered and small-scale milk production, inadequate transport facilities in most parts of the country, dependence on imported plant and machinery required for milk collection, processing and manufacturing, shortage of technical and skilled personnel and the lack of properly organised systems of marketing. Efforts have, therefore, to be directed towards the collection of surplus milk from rural areas on an organised basis and the development of assured supply of good quality milk and milk products at reasonable prices to the consumers.

### REVIEW OF PROGRESS

25. The First Plan provision of Rs. 7.81 crores was almost fully utilised. The main programmes related to the supply of milk to large cities under hygienic conditions supported by schemes of procurement from rural areas.

In the Second Plan, a provision of Rs. 17.44 crores was made for dairy development programmes. Against this provision, an amount of Rs. 12.05 crores will be utilised. The Plan included 36 dairy plants for supply of milk to large consuming centres, 12 rural creameries and 7 milk product factories for the utilisation of surplus milk in milk pockets, expansion of 12 dairies and salvage farms, training of technical personnel and survey of dairy areas.

26. Due to the shortage of foreign exchange and the difficulty of obtaining plant and machinery, dairy development programmes had to be confined mostly to those schemes for which equipment was available within the country, or was provided for under foreign aid programmes. Dairies have already been set up in Delhi, Poona, Kurnool, Guntur, Kodaikanal and Haringhata. Pilot milk schemes have also been started in some of the important towns. In all, 28 milk supply schemes are at various stages of implementation. Two milk product factories, one at Amritsar and the other at Rajkot and three rural creameries—one each at Barauni, Aligarh and Junagadh are being set up with foreign aid. There were 2257 cooperative milk supply societies and 77 milk supply unions in the country at the end of the year 1958. With membership of 211,131 and owned funds of Rs. 183 lakhs, they sold milk and milk products worth Rs. 11.32 crores.

## PROGRAMMES FOR THE THIRD PLAN

27. The policy to be pursued in regard to dairying is to develop dairy projects with greater emphasis on milk production in the rural areas linked up with plans for marketing of surplus milk in the urban centres. The supply and collection of milk will be undertaken by a network of producers' cooperatives in the villages. The processing and distribution of milk and manufacture of milk products will be organised through plants operated, as far as possible, on cooperative lines. It is expected that reliance on cooperative organisations would help in enlisting public participation and add to the pool of funds available under the Plan for this activity. In addition to development aimed at in the public sector, manufacture of milk products is proposed to be encouraged in the private sector. In the Second Plan, two units each for the manufacture of infant milk foods and malted-milk foods and one large-scale unit for sweetened condensed milk were set up. During the Third Plan two plants with a capacity of about 900 tons will start the production of infant milk foods, three units with a total capacity of 5300 tons per annum will produce condensed milk and one unit will manufacture 670 tons per annum of milk beverages.

28. During the Third Plan, 55 new milk supply schemes will be taken up in cities with population exceeding one lakh and in growing industrial townships. In order to utilise economically the milk available in certain milk pockets where there are no ready markets for the disposal of fluid milk at remunerative price, rural creameries for the production of butter, ghee, cheese and other bye-products such as casein, lactose, milk powder etc. will be undertaken. It is proposed to establish 8 such rural creameries, 4 milk product factories and 2 cheese factories for developing the rural milk pockets. There is also a general shortage of concentrates which raises the cost of production of milk. Production of balanced rations through the use of various agricultural wastes and by-products such as wheat and rice brans, bagasse, molasses, decorticated cake etc. can go a long way in making available cheaper feeds for the cattle. It is proposed to establish 4 cattle feed compounding factories in the close vicinity of large milk supply plants. A provision of Rs. 36 crores has been made for dairy schemes in the Third Plan.

In order to give an impetus to dairy programmes, arrangements have to be made for the manufacture of dairy equipment and machinery within the country. Fabrication of dairy equipment, specially for small units, should be encouraged so as to popularise dairying as a local industry in the rural areas. Four firms have already been licensed for the manufacture of dairy equipment. These will start production during the Third Plan.



be greatly augmented through the use of improved techniques in all aspects of production and utilization and organisation of fishermen on cooperative lines.

#### REVIEW OF PROGRESS

34. In the First Plan an outlay of Rs. 2.8 crores was incurred on fisheries development. Expenditure in the Second Plan amounted to about Rs. 9 crores.

The survey of 13.34 lakh acres during the Second Plan points to the substantial fisheries resources. Additional area of about 82,000 acres was reclaimed for stocking suitable varieties of fish. An area of 16.7 lakh acres was stocked with about 600 million fry and fingerlings.

Investigations were undertaken at the Central Fisheries Technological Research Institute at Cochin with a view to improvement in the designs of fishing craft and fishing gear. In addition to the Central Offshore Fishing Station, Bombay, for exploring new fishing grounds, three similar Stations were established at Cochin, Tuticorin and Visakhapatnam. Boat-building yards were established in Gujarat, Maharashtra, Mysore, Kerala, Madras and Andhra Pradesh. About 1800 boats were mechanised. With these, fishermen could go out into the sea 15 to 20 miles distance compared to the capacity of the customary non-mechanised boat to go out to a maximum of 6 miles and as a rule only 3 miles. Six refrigerated rail wagons were introduced on an experimental basis for the transport of fresh fish from the producing centres along the coast to places like Calcutta and Delhi. As a result of these various measures the production of fish increased from 7 lakh tons to 10 lakh tons by the end of the First Plan and to 14 lakh tons by the end of the Second Plan.

#### PROGRAMMES FOR THE THIRD PLAN

35. Fisheries schemes in the Third Plan have been formulated with the main objective of increased production so that protein diet becomes available to the population in addition to cereals. Due consideration has been given towards effecting improvement in the condition of fishermen. Emphasis has also been placed on the development of export trade.

36. *Inland fisheries.*—The programme for inland fisheries undertaken in the First and Second Plans will be further expanded. Large-scale expansion has become possible in view of the technique of induced breeding by hormone treatment which has been successfully developed on Indian carps. This is a major development which will enable spawn and fry to be raised independently of the naturally-spawning areas. This technique will reduce the need for transporting fry and fingerlings to different areas, thereby minimising considerably mortality

during transport. These Indian carps are useful in increasing the productivity of fish ponds. Another important development has been the introduction of the common carp from South-East Asia which is a useful addition to Indian carps. These developments can lead to a substantial increase in fish supply, provided they are accompanied by improvements in organisation at the local level through Panchayats and cooperatives and in marketing.

37. The Third Plan provides for a programme of 50,000 acres of water in different States being used as demonstration fish farms. Similarly, demonstrations in the utilisation of estuarine areas will be undertaken over an area of 1500 acres and of marshy lands over an area of 2000 acres. It is proposed to stock 1200 million fry and fingerlings. Regular stocking will also be done in the river valley projects which offer considerable scope for fishery development. Programmes for the Third Plan include arrangements for clearing trees, boulders and other obstructions, establishment of nurseries, and measures for conservation of fish till it comes to full maturity. These are necessarily long-term measures and stocking undertaken in the Third Plan will yield harvest in about 15 years' time. The economic value of development on these lines is, however, apparent from work done at a few reservoirs during the Second Plan.

38. To ensure effective use of inland waters, certain improvements in organisation at the local level are essential. In the past, where water was owned by individuals, they did not have the resources to develop it. Where it belonged to Government, it was auctioned and developmental aspects did not receive the necessary attention and the fish was soon depleted. For these reasons, many ponds have already gone out of use. Panchayat Samitis and Panchayats should undertake the development of fish ponds and other inland waters as a growing local resource. They should work in close association with cooperatives through which credit and marketing facilities should be made available.

39. *Fisheries cooperatives.*—The formation and running of fisheries cooperatives is an important aspect of fisheries development during the Third Plan. There are at present about 2100 fisheries cooperatives with a total membership of about 220,000. They are mainly centred in Andhra Pradesh, Maharashtra, Gujarat, Kerala and Madras, although a few societies also exist in other States such as Mysore, Assam, Bihar and Orissa. Fisheries cooperatives function with varying degree of success and only about 800 of them can be said to have satisfactory performance. A number of factors have hampered the growth of cooperative societies, the more important these being:

- (a) fishermen do not generally own boats, nets and other fishing equipments. In consequence middlemen, who provide

credit, bind fishermen to work on their boats. For allowing the use of the boat, as much as 50 per cent of net sale proceeds is recovered as charge for hire; and

- (b) cooperative societies have been mainly engaged in providing credit and an adequate effort has not been made to develop production and marketing.

Revitalisation of the existing fisheries cooperatives and their further development and linking up with marketing and processing cooperatives is an important task to be carried in the Third Plan. It is proposed to work out a detailed programme for this purpose. Organisation of cooperatives for fishermen is an indispensable means for preventing exploitation by middlemen, removing the indebtedness of fishermen and increasing production.

40. *Marine fisheries.*—About two-thirds of the country's estimated fish production comes from the sea. In the Third Plan, besides intensifying existing programmes for installing engines in existing crafts and assuring supply of fishing requisites, it is proposed to introduce 4000 new mechanised crafts. The exploratory fishing programmes of the Central Deep Sea Fishing Stations at Bombay, Cochin, Tuticorin and Visakhapatnam will be expanded and additional units at Veraval, Mangalore, Paradwip and Port Blair will be established. These investigations will assist the development of a modern fishing industry. It is also proposed to operate 35 large vessels and to provide landing and berthing facilities for fishing at 16 ports.

41. Fish being a highly perishable commodity, adequate facilities for marketing are absolutely essential. Ice-cold storage, processing and canning are necessary processes for securing a reasonable price for the catches. A beginning has already been made in the Second Plan. Freezing facilities for prawns have come up in Cochin, Mangalore and Bombay. During the Third Plan period it is proposed to have 72 ice and cold storage plants distributed in different States to facilitate movement of fish in good condition to consuming centres. In addition, freezing and canning units are expected to be established in coastal districts in Western India, specially in Kerala, Mysore and Gujarat. Experience gained in the running of refrigerated rail wagons will be utilised in developing a regular transport system between fish production and consumption centres throughout the country. About 20 new vans are proposed to be introduced on the main routes. Work in the Indo-Norwegian project in Kerala, where new boats have been designed, mechanization of boats undertaken and better gear introduced, has also brought out the need for an integrated marketing system. In this project the ice and cold storage plant has been established as the base of operations and a cooperative fishermen's sales organization is being set up. Insulated transport and

equipment for preserving fish at the consumption centres have also been introduced.

As a result of programmes that are to be taken up during the Third Plan period, the production of fish is expected to increase from 14 lakh tons to 18 lakh tons. Exports of fish may go up from about Rs. 6 crores to about Rs. 12 crores. About Rs. 29 crores have been allotted for the development of fisheries in the Third Plan.

#### RESEARCH AND EDUCATION

42. *Research.*—With the establishment of Central fisheries Research Stations for Marine Fisheries at Mandapam, and for inland fisheries at Barrackpore as also the Central deep sea fishing station at Bombay, considerable progress has been made in the study of biology of commercial species, scientific investigations on conservation and management of inland fishery resources and charting of new fishing grounds. In the Third Plan, new investigations on oceanic fisheries, oceanographic studies, high altitude fisheries, fresh water prawns, back water fisheries, etc. will be taken up. Experimental and exploratory fishing will be undertaken in four new centres.

The Central Fisheries Technological Station, Cochin has undertaken investigations on gear material and their preservation, designing of improved types of mechanised fishing crafts, storage of fish in fresh, chilled and frozen conditions, processing and utilisation of fish and other marine products, etc. These investigations will be intensified. In addition to the research schemes undertaken by the Central Stations, State Fisheries Departments will also work on local problems on fisheries.

43. *Education.*—A fisheries training institute for fisheries administrative personnel at district level has started functioning at Bombay. An institute for training operatives in fisheries at various levels will be established at Cochin. A sub-station for the training of assistant fisheries development officers and other personnel required for inland fisheries would be set up at Kaushalya Ganga near Bhubaneshwar in Orissa.

The total requirement of persons to run the different development projects in fisheries during the Third Five Year Plan is estimated at about 2100. Of these, personnel of the level of district fisheries officers and other technical officers will number about 300 and 500 respectively. The requirements of the former will mostly be met by training at the Central Institute of Fisheries Education which will be established at Bombay, while the requirements of the other field staff will be met by the expanded activities which have to be provided at the Inland Fisheries Research Station, Barrackpore, the Inland Fisheries Sub-centre in Orissa and the offshore fishing stations. As regards research and technological personnel for research institutions, it is important that adequate facilities should be available in the universities.

## CHAPTER XXII

### FORESTS AND SOIL CONSERVATION

#### FORESTS

DEVELOPMENT of forest resources is an integral part of the programme for optimum land utilisation. Forests have important protective as well as productive functions. They not only supply timber, fuel, fodder and a variety of other products but also have a moderating influence against floods and erosion and help maintain soil fertility. A number of industries, such as, construction, furniture, paper, rayon, plywood, matches, resin and tanning depend on forests for supply of raw materials. Development of forestry and forest industries is also essential for raising the income of the tribal people who live in the forest areas.

2. In view of India's tropical climate, periodic monsoons, low forest productivity and predominantly agricultural economy, it has been urged that at least a third of the total land area in the country should be under forests. But as against this, the actual proportion today is only 21.8 per cent. Moreover, most of the forests are concentrated in a few States only, namely, Assam, Madhya Pradesh and Orissa and a few Union Territories. In northern India, in particular, the proportion of forest land to the total area is much lower than the all India average. There is great need not only for increasing the forest area for the country as a whole but also for more intensive development in areas which are lacking in forest wealth.

3. While the area under forests continues to be at a low level, the demand for various forest products, both for industrial use and for domestic purposes, has been steadily increasing. It is estimated that the requirements of industrial wood (including pulp material) which amount to 4.5 million tons at present, would increase to about 9.5 million tons in 1975. The demand for paper and rayon grade pulp, in particular, is likely to expand considerably with growing population, increasing literacy and rising standards of living. As new plantations take 25 to 30 years to develop, in the ordinary course production may not increase beyond 5.5 million tons by 1975, thus leaving a gap of as much as 4 million tons. Due to acute shortage of fuel wood, nearly 400 million tons of cowdung (wet weight) equivalent to 60 million tons of firewood is annually burnt instead of being put in land as manure. The shortage of firewood is anticipated to be about 100 million tons by 1975. As regards minor produce, the present requirement of tanning materials is about 30,000 tons.

of pure tannin, 30 per cent of which still comes from abroad. In the case of medicinal plants, owing to favourable ecological situation there is considerable scope for development.

4. In productive areas in well-maintained forests, yields of about 2.75 tons per acre per annum are obtained for sal, of 4.10 tons for deodar and of 1.30 tons for chir pine. For several reasons the average yield in India is, however, extremely low. Large areas of unclassified State forests and the former private forests acquired by Government after the abolition of zamindari are understocked and require to be rehabilitated. In forests in inaccessible hilly areas a proportion of the timber is lost because of lack of adequate facilities for transportation. Large quantities of inferior woods which could be put to economic use through seasoning and preservation treatment remain only partially utilised. Customary forest rights and concessions, which are undoubtedly important, also have the effect of reducing the yield. As economic development proceeds and river valley and other projects are undertaken, to an extent forest areas are even apt to diminish. There are obvious difficulties in expanding the area under forests. In the circumstances the principle objective of forest policy must be to raise productivity progressively and to undertake cultivation of quick-growing species so as to meet the growing requirements of the economy.

#### REVIEW OF PROGRESS

5. Both the First and the Second Plan put considerable emphasis on preservation processes, improvement of communications and introduction of degraded forests, establishment of new plantations, especially of fast growing species, application of modern systems of intensive forest management, better utilisation of inferior varieties by seasoning and preservation processes, improvement of communications and introduction of modern logging techniques. In 1950, the Central Board of Forestry was set up. In 1952, Government declared its forest policy, which emphasised the protective as well as productive role of forests and suggested as a desirable long-term objective that a third of the land area should be under forests. A sum of Rs. 9.5 crores was spent during the First Plan and about Rs. 19.3 crores during the Second Plan for the development of forestry. Schemes directly undertaken by the Central Government related to forest research, forest education and the preservation of wild life. Large tracts of degraded forests situated in the former zamindari estates and princely States came under Government control. Schemes for the demarcation of such areas and preparation of maps were taken up. New plantations of matchwood extending over an area of about 55,000 acres and of industrial timber over an area of 330,000 acres were undertaken during the First and Second Plans. Survey and demarcation was undertaken over about 18000 square miles,

9000 miles of forest roads were built and about 400,000 acres of degraded forests were rehabilitated. Improved methods of logging were demonstrated, especially in the States of Punjab, Himachal Pradesh, Uttar Pradesh and Jammu & Kashmir.

#### PROGRAMMES FOR THE THIRD PLAN

6. In the Third Five Year Plan it is proposed not only to intensify some of the programmes initiated under the First and Second Plans but also to put special emphasis on measures which will help meet the long term requirements of the country and ensure more economic and efficient utilisation of the available forest products, including inferior timber and wood residues. The immediate objective is to increase the output through better techniques of timber extraction, to develop forest communications and to bring about better utilisation through the increased use of preservation and seasoning processes. The Plan provides an outlay of Rs. 51 crores for various development programmes in the States and Union Territories, including a sum of Rs. 6.7 crores for Central and Centrally sponsored schemes. Some of the important programmes included in the Third Plan are briefly described below.

7. *Economic plantations.*—A large scale programme of new plantations is essential for meeting the increasing requirements of industry. These plantations should comprise not only the traditional species of timber with long periods of maturity but also fast growing species with a comparatively short rotation. The programme for new plantations includes 210,000 acres for teak, 40,000 acres for bamboo, 60,000 acres for matchwood, 22,000 acres for wattle, 46,000 acres for fuel-wood including casuarina and 325,000 acres for miscellaneous plantations. An additional programme for planting 300,000 acres over the period of the Third Plan with fast growing species of industrial wood is also proposed to be taken up.

8. *Village and extension forestry.*—The importance of village and fuel plantations and of extension forestry has been frequently stressed, but the practical results gained thus far are small. Panchayat Samitis and Panchayats should be assisted to take up these programmes on a large scale, and Forest Departments should ensure that seeds and saplings are available in each area. There is considerable scope for community effort in planting trees on village common lands, along village roads, contour bunds and irrigation tanks. Individual cultivators should also be assisted in growing trees. It is estimated that an area of over 1.2 million acres will come under farm forestry during the Third Plan. Programmes for planting trees along national and State highways, canal banks and railway tracks should be intensified. Efforts in these directions can add substantially to the supply of firewood and of wood for tools and implements.

9. *Promotion of methods for increased production.*—Improved logging tools and mechanical contrivances can help reduce waste and increase the utilisation of wood resources. In hilly areas, in particular, the savings are considerable. Modern tools and other equipment employed in advanced countries have been tested and the staff of Forest Departments in several States have been trained in their use. Work on improved implements is also being undertaken at the Forest Research Institute, Dehra Dun.

10. Some of the rich forests at higher elevations in the Himalayas remain untapped or are only partially exploited. This is mainly due to their inaccessibility. There are some steep and rocky slopes where the use of cable cranes is essential. Forest roads need to be linked with trunk roads and river landings, so that the timber can be transported or floated easily. The Plan provides for the development of about 15,000 miles of forest roads.

11. *Development of minor forest produce.*—Indian forests have a large variety of minor products, there being over 3000 species, besides a number of animal products. Considerable scope for exploitation and development exists, for instance, in respect of medicinal plants, essential oils, resins, fatty oils, fats, waxes, starches, bamboos, canes, grasses, and insect products, such as, honey, lac, and bees' wax. Export possibilities also exist for certain medicinal plants, such as, *Rauwolfia serpentina*. Proposals for the exploitation of various forest products are provided for in the plans of States.

12. *Timber treatment.*—There are about 100 secondary species of timber which are not utilised properly at present. These secondary species can be used as a substitute for the primary timber after the necessary seasoning and preservation treatment. The Plan provides for the setting up of 27 seasoning and 3 seasoning-cum-preservation plants. It is important that high grade timber should be reserved for uses which are valuable and for which adequate substitutes are not available.

13. *Survey and demarcation.*—Large areas outside the reserved forests and those recently acquired by State have not yet been classified nor their legal status defined. Proper demarcation on the ground is essential for scientific working and rehabilitation of these areas. Survey and demarcation work is proposed to be taken up over an area of about 43,000 square miles.

Rehabilitation work on areas which were surveyed and demarcated previously, will be taken up and extended to about 600,000 acres, particularly in Uttar Pradesh, Madhya Pradesh, Madras and Mysore.

14. *Pre-investment survey of forest resources.*—The need for a comprehensive appraisal of the country's forest resources with a view to develop-



ing forest-based industries such as rayon, chipboard, particle board, fibre board, etc. has been felt for some time. Until adequate and dependable supplies of raw material are established, it is difficult to promote the formation of integrated industrial units. The Third Plan includes a project for a pre-investment survey of forest resources and industries. The main object of the survey is to facilitate the formulation of a long-term programme for planting quick-growing species, for opening up forest regions in the interior and for assessing the economic prospects of forest-based industries. The pre-investment survey will also take into account the requirements of different industries over the next 15 years or more. The survey is intended to be followed up by detailed programmes for the improvement of transport facilities, setting up of integrated wood utilisation units of saw milling, board manufacture, etc. Measures taken in the light of the survey should assist in filling the gap between the availability of timber and other forest products of economic value and the demand for these products to which reference has already been made.

15. *Grazing and pasture improvement.*—In some parts of the country there is often acute shortage of fodder for cattle. There are certain hardy trees and bushes, the leaves of which have fodder value and are extensively used by local graziers for tiding over periods of scarcity. Where agriculture is precarious or where large non-arable lands exist and the people follow pastoral pursuits and maintain big herds of cattle, it is necessary to establish large pastures studded with suitable trees and shrubs of fodder value. The Plan provides for the development of about 150,000 acres of pasture and grazing lands in such areas.

16. *Forest research.*—The programme of research initiated during the Second Plan at the Forest Research Institute, Dehra Dun will be continued and further expanded. Three regional research stations are to be established for supplementing the work done at Dehra Dun. With a view to promoting the use of various species of wood available in forests in different regions, extensive studies will be undertaken at these centres on their properties, e.g., strength, durability and economic use. Investigations will also be made on factors affecting the yield of valuable products, such as, sandal, agar, etc. and the possibilities of more intensive utilisation of lesser known forest products. Experiments will be conducted on the utilisation and raising of various kinds of canes and bamboos which can be put to diverse use.

17. *Training of technical personnel.*—For the efficient implementation of different programmes of forest development, a large number of trained persons will be required. It is estimated that 480 officers and 1,520 rangers will have to be trained for State Forest Departments. It is proposed to increase the rate of admission to the officers' course from 85 to 100 at the Forest College, Dehra Dun, and to the forest rangers' course from 200 to 300 at the Forest Rangers' Colleges at Dehra Dun and Coimbatore.

In addition, States will provide facilities for the training of about 10,000 field personnel, such as, foresters and forest guards.

18. *Nature conservation.*—Nature conservation is an important aspect of forest development and includes the protection and proper management of indigenous flora and fauna. Where fauna have been greatly depleted due to human interference, animals and birds will be re-introduced. The Plan includes a programme for the development and establishment of 5 zoological parks, 5 national parks and 10 wild life sanctuaries. The Delhi zoological park is also to be developed further.

19. *Amenities for forest labour.*—Forest labour is not yet properly organised. To safeguard the interests of forest labour and the tribal people from exploitation by private contractors, as far as possible it is proposed to organise them into forest labour cooperative societies and give these societies suitable concessions in the matter of working of coupes and exploitation of other produce by way of encouragement. State plans provide for schemes for housing, medical aid, water-supply and primary education for forest labourers.

20. *Public cooperation.*—Public cooperation has a vital role in forest development. The contribution of the local community in village and extension forestry has been referred to earlier. Whether trees are planted by the people or by Government agencies, their care and protection can only be secured if the people as a whole are conscious of the value of trees and endeavour earnestly to preserve them. Village fuel plantations are important community assets and village communities should be helped to build them up for themselves and, progressively, greater responsibility for managing forests should be placed on Panchayat Samitis and Panchayats.

### SOIL CONSERVATION

21. One of the principal reasons for low productivity in agriculture in certain parts of the country is the progressive deterioration of soil due to erosion. In irrigated areas soil deterioration has occurred on account of water logging and consequent salinity and alkalinity. It has been estimated that about 200 million acres of land, that is, almost a fourth of the country's land surface is suffering from soil erosion. It will not be possible to maintain yields of crops on dry lands, much less to increase them, if the soil is allowed to deteriorate. Effective steps, therefore, need to be taken to plan and undertake soil and moisture conservation measures on a large scale.

### REVIEW OF PROGRESS

22. The urgency of a nation-wide policy for dealing with various problems relating to soil conservation was emphasised in the First Five Year Plan. In 1953, the Ministry of Food and Agriculture set up the

Central Soil Conservation Board to initiate, organise and coordinate research in soil and water conservation, to train personnel and to assist States in carrying out soil conservation programmes. A sum of about Rs. 1.6 crores was spent in the First Five Year Plan on implementing soil conservation programmes. A large part of this was utilised for contour bunding and terracing of about 700,000 acres of agricultural lands, mostly in Maharashtra and Madras States. Eight regional research-cum-demonstration centres were established for the study of problems of soil and water conservation. In addition, the Desert Afforestation and Research Station was set up at Jodhpur for undertaking the study of the desert problems.

23. In the Second Plan about Rs. 18 crores were spent on carrying out soil conservation works. Contour bunding and terracing made good progress, especially in the erstwhile Bombay State, and an area of 2 million acres was benefited. An integrated all-India Soil Conservation and Land Use Survey was also initiated. About 12 million acres have been surveyed, of which about 2 million acres are in the catchment areas of river valley projects.

24. Training centres started during the First Plan for training officers at Dehra Dun and for assistants at Kotah, Bellary, Ootacamund and Hazaribagh were continued during the Second Plan. About 170 officers and 900 assistants have been trained. In addition, arrangements were made for training community development personnel and for providing refresher courses.

25. With a view to popularising dry farming techniques, 40 demonstration projects, each covering about 1000 acres and undertaken on a catchment basis were sanctioned in the latter part of the Second Plan. Work has already begun on some of these projects and these will be extended and completed during the Third Plan.

26. Research work carried out at various research centres has yielded useful results. Methods for the reclamation of shallow ravines for agricultural purposes were worked out for Gujarat ravines. Techniques developed for the economic utilisation of deep and narrow ravines for horticultural crops, forest plantations and pasture improvement have brought promising results. Experiments conducted in deep black soils have shown that contour cultivation increases the yield by 60 to 70 lbs. per acre in the case of jowar grain and about twice that much amount in the case of fodder. At Jodhpur, techniques were developed for stabilising moving sand dunes and shifting sands, and about 1800 acres of sand dunes were stabilised. Studies on pasture development have indicated that closure and rotational grazing helped to increase materially the yield of grasses.

27. The Desert Afforestation and Research Station at Jodhpur was reorganised as a Central Arid Zone Research Institute in collaboration with UNESCO. The scope of its studies now extends to arid and semi-arid regions throughout the country. Experiments carried out at Jodhpur have emphasised the importance of pasture development and management for stabilisation of shifting sands. A scheme for pasture development was started in Rajasthan. The scheme envisages setting up of 55 paddocks of about 200 acres each on pasture improvement and management for demonstration and research purposes. About 50 paddocks in 18 extension blocks have been developed so far.

#### PROGRAMMES FOR THE THIRD PLAN

28. With experience gained during the Second Plan and larger numbers of persons trained in soil conservation, development work during the Third Plan is proposed to be stepped up considerably. An outlay of about Rs. 72 crores has been provided for the execution of various soil conservation programmes.

29. *Contour bunding and dry farming techniques.*—However much irrigation may spread in India, there will still be left an area of 140 to 150 million acres in which increased yields have to be obtained, mainly through contour bunding, soil conservation and dry farming techniques. Thus, for balanced development of the agricultural resources, it is essential that large-scale soil conservation and dry farming programmes are taken up on the basis of mass participation by the rural communities concerned. In the Third Plan, about 11 million acres will be covered by contour bunding and about 22 million acres will be benefited under dry farming techniques. In addition to contour bunding, the programmes which need special attention are rain water conservation, weed control, strip cropping and judicious use of organic manures including green manures.

30. *River valley projects.*—Afforestation of catchment areas of rivers and allied measures of land-use are essential for (i) prolonging the life of storage reservoirs of river valley projects, (ii) effective functioning of the minor irrigation tanks, (iii) moderating floods, (iv) avoidance of erosion of land, (v) improving fertility of soil, and (vi) augmenting the supply of timber and fuel. As explained in an earlier chapter, soil conservation measures in the catchment areas of Bhakra-Nangal, Domodar Valley Corporation, Hirakud and some other major river valley projects are specially urgent. Out of a total catchment area of about 37 million acres under these river valley projects, nearly 15 million acres need to be treated eventually with soil conservation measures. During the Second Plan, about 140,000 acres were covered under these measures. An allocation of Rs. 11 crores has been made in the Third Plan for extending this programme to another million acres. Emphasis has also been laid on

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increasing the tempo of the programme of fringe plantations on river and canal banks as a measure to check bank erosion.

31. *Reclamation of alkaline and usar lands.*—An important cause of deterioration of irrigated lands is the rise in sub-soil water level and the development of saline (usar) and alkaline soils. Out of about 12 million acres of such lands, a third of the area is damaged by water-logging and soil salinity, another third is affected by salinity and alkalinity with low sub-soil water table, and the balance of the area is threatened by the water table rising to less than ten feet from the surface. Expansion of irrigation increases the risk of damage to soil. Provision for drainage in areas affected by water-logging is therefore essential. A target of about 200,000 acres has been proposed during the Third Plan for reclaiming waterlogged, saline and alkaline lands, mainly in Punjab, Uttar Pradesh, Mysore, Gujarat, Maharashtra, Rajasthan and Delhi. As a result of experiments conducted at the Banthra Farm near Lucknow and at other centres encouraging results have been obtained, and further studies are being undertaken.

32. *Problem of ravine lands.*—Large areas of lands along rivers such as the Yamuna, the Chambal and the Mahi and their tributaries have been badly eroded and transformed into ravines. The march of ravines is progressing unabated, resulting in loss of productive lands. About 3·5 million acres in Uttar Pradesh and about 800,000 acres each in Madhya Pradesh, Rajasthan and Gujarat are badly affected by ravine erosion. Work at research centres has emphasised the importance for the reclamation of the ravine lands by the adoption of controlled grazing, afforestation, terracing and other soil conservation measures in the catchment areas. Surveys to determine the severity of the problem in various areas and the action to be taken are, however, an essential preliminary. It is proposed to undertake the survey and preparation of topographical maps of ravine areas with a view to the formulation and execution of reclamation projects. A provision of Rs. 50 lakhs has been made for this purpose and for the survey and pilot work in connection with the reclamation of certain desert lands. During the Second plan, a small beginning was made for the reclamation of ravines, and pilot projects were set up in Madhya Pradesh and Gujarat. Programmes for the Third Plan at present provide for the reclamation of about 40,000 acres of ravine lands.

33. *Desert areas.*—Overfelling of trees, excessive grazing and improper land use have accentuated the formation of desert. The desert in India extends from the Rann of Kutch to large stretches of arid tracts to the north in Gujarat and Rajasthan. Due to the pressure of population, both human and livestock, vegetation is disappearing in the neighbouring areas, creating conditions conducive to further desert formation and destruction of fertile agricultural lands in the States of Punjab, Madhya

Pradesh and Uttar Pradesh. Since the major occupation of the bulk of the population in these areas is rearing of cattle and breeding of sheep and goats, the wind erosion problem is linked with the problem of the pastoral areas. The Central Arid Zone Research Institute has taken up research in these and other related problems. A pilot project is also proposed to be undertaken for examining the methods and economics of reclaiming desert lands in a portion of the Rann of Kutch. It is proposed to bring about 100,000 acres of desert areas under suitable soil conservation measures including afforestation and pasture development in different States.

34. *Hilly areas and other wastelands.*—From the point of view of soil erosion, hilly areas, denuded forests and wastelands pose a serious problem. Soil erosion taking place in these areas has adverse effects on agriculture in the hills and in the plains. Overgrazing, shifting cultivation and indiscriminate felling of trees have led to this situation. To control soil erosion and to restore productivity for normal utilisation, afforestation and pasture development will be extended to about 700,000 acres covering hilly areas, denuded forests and wastelands.

35. *Survey, research, demonstration and training.*—The Central Soil Conservation Board has worked out an integrated programme of survey, research, demonstration and training. During the Third Plan it is proposed to survey an area of over 15 million acres, most of which lies in the catchment areas of river valley projects. The regional research-cum-demonstration centres set up by the Board for the study of regional soil erosion problems will be strengthened. These centres have been located at Dehra Dun (Himalayan region), Chandigarh (Siwalik region), Kotah (ravines in Rajasthan), Vasad (ravine lands of Gujarat), Agra (Yamuna ravines), Bellary (black soil), Ootacamund (hilly areas), Chhatra (water-shed of Kosi) and Jodhpur (desert). Two more centres, in Orissa and Andhra Pradesh, for studying the problems of red soil areas are proposed to be set up. The Central Arid Zone Research Institute will undertake research on fundamental and applied problems of the arid zones. To stabilise the drifting sands of the desert, a pasture development scheme is also in progress. Provision has also been made for improvement of shifting cultivation. There will be one main centre in Assam, with two sub-centres and a centre each in Manipur, NEFA and Tripura. Research studies on shifting cultivation will aim at developing suitable techniques of stabilised farming for conservation of soil and water and maintenance of soil productivity. Socio-economic aspects of shifting cultivation in the region will also be studied.

36. Facilities for imparting training to officers exist at Dehra Dun and those for assistants at the four training centres, namely, Ootacamund,

Bellary, Kotah and Hazaribagh. The training of sub-assistants is arranged by States. In addition to regular training courses for officers and assistants, the Central Government have also provided facilities at Dehra Dun for conducting special three months' refresher course for gazetted officers and 2 to 4 weeks' short intensive training course for extension and block development officers. The additional requirements of technical personnel during the Third Plan are estimated at about 350 officers, 1700 assistants and 9000 sub-assistants. The existing facilities for training are being expanded accordingly.

37. *Administrative organisation.*—Soil conservation work has assumed great importance, both in river valleys where costly projects have to be executed and in dry areas where contour bunding and other soil conservation measures are proposed to be undertaken on a large scale. Each State requires a strong soil conservation organisation, for initiating, planning and executing soil conservation programmes. Whether it takes the form of a Department or of a Wing in an existing Department, it is essential that a full-time officer at an appropriate level should be responsible for its work and direction. The organisation should include in it personnel with requisite qualifications and training in the fields of agriculture, engineering and forestry. There is also need at the State headquarters of a co-ordination committee which includes the heads of the Departments of Agriculture, Irrigation, Forests and Soil Conservation as its members. Such a committee can assist in obtaining policy decisions expeditiously and in providing expert guidance and coordination in activities relating to soil conservation.

38. *People's participation.*—In the execution of soil conservation programmes, such as contour bunding and dry farming, the aim should be to secure on as large a scale as possible the participation of the people by encouraging owners and users of land in taking up these measures on a voluntary basis. Erosion consciousness should be aroused among cultivators so that they are willing to take up soil conservation work on their own initiative. For this, intensive educational programmes will have to be undertaken with the help of village institutions and other voluntary organisations to develop proper know-how among the farmers. As experience in several areas, notably in Maharashtra shows, mobilisation of local leadership for securing adequate and timely public participation will go a long way in speeding up soil and water conservation programmes. Panchayati Raj institutions should be able to play an increasing role in putting across the programme to the people on a mass scale.

39. *Legislation.*—For effective execution of contour bunding, soil conservation and other land improvement measures, the introduction of suitable legislation, empowering State Governments to frame soil conservation schemes for the basin of a river or a stream or for groups of

villages has been recommended. The cost of works to be undertaken on Government lands will be borne by the State. Works to be undertaken in individual holdings should be executed by the beneficiaries themselves under suitable technical supervision. If a work is not undertaken by the beneficiaries concerned, it may be carried out by the Government or on its behalf by the Panchayat Samiti or the Panchayat, and the cost recovered from them. Legislation broadly on these lines has been enacted in nine States, and five more States propose to undertake similar legislation in the near future.



## CHAPTER XXIII

### AGRICULTURAL LABOUR

#### REVIEW OF PROGRESS

To bring about improvements in the economic conditions of agricultural labourers and to remove the social disabilities from which they have suffered in the past are among the major tasks of planned development. The two principal problems are the place of agricultural labour in the future rural economy and provision of work. In the past the village economy was rooted in a scheme of stratification largely based on caste and occupation. As a result of various measures of social reform and the efforts made since Independence, the social handicaps associated with agricultural labourers, and with backward classes generally, have greatly diminished. At the same time, the economic problems of these sections of the population, especially the need for larger opportunities for work, have been thrown into sharper relief. It is one of the primary objects of the Five Year Plans to ensure fuller opportunities for work and a better living to all sections of the rural community and, in particular, to assist agricultural labourers and the backward classes to come up to the level of the rest. Their problems undoubtedly constitute a challenge, and the obligation rests upon the community as a whole to find satisfactory solutions for them.

2. The size of the problem of agricultural labour varies from region to region, depending on such factors as pressure of population, availability of land for cultivation, differences in the extent of irrigation and double cropping, fertility of land, cropping patterns and opportunities available for seasonal migration and for employment outside agriculture. However, the broad features can be discerned from the results of the two all-India Agricultural Labour Enquiries undertaken in 1950-51 and 1956-57 and the surveys of the Programme Evaluation Organisation. The concepts in the two Agricultural Labour Enquiries were different to some extent and the data are not wholly comparable. Generalisations for the country as a whole have also several limitations. What both Enquiries bring out is the enormous size of the problem, the widespread under-employment that exists, and the fact that increase in population has borne harshly on this section of the population. These general conclusions are also reflected in the results of bench mark surveys undertaken by the Programme Evaluation Organisation.

3. The problem of agricultural labourers is part of the wider problem of unemployment and under-employment in rural areas. Even though, with the development of agriculture and irrigation, there has been increase in production and in the total volume of work, this is shared among much larger numbers. Those sections of the rural population who are landless and are not actual cultivators have benefited much less than others; in some areas their conditions may have actually worsened. The basic problems of the rural economy are low income, low productivity and lack of continuous employment. To the extent these problems are solved through the more intensive programmes of development to be implemented in the Third Plan, the economic conditions and prospects of agricultural labourers should also improve. It has, however, been always realised that the various programmes for the development of the rural economy, which are undertaken in the interest of the rural population as a whole must be supplemented in several directions by special measures for assisting agricultural labourers in improving their living conditions and obtaining a fair share of the wider opportunities which are now being developed in the villages through the community development and other programmes.

4. The First Five Year Plan included proposals for the settlement of agricultural labour and protection against ejection from homesteads. Not much progress was made in schemes for land resettlement. The Minimum Wages Act, 1948, was applied to employment in agriculture. Experience shows that levels of agricultural wages are bound up to a considerable extent with increases in levels of agricultural productivity and the greater use of money as the medium of exchange. Accordingly, it was decided that in enforcing minimum wages, the first attention should be given to low wage pockets in different States, and these should be identified.

5. In the Second Five Year Plan, in addition to programmes of development in agriculture and irrigation and the expansion of the community development programme, Rs. 200 crores were provided for the development of village and small industries. In rural programmes, high priority was suggested for schemes intended to benefit the weaker sections of the population like agricultural labourers and artisans and others. The Plan also envisaged a number of special schemes for the benefit of agricultural labourers, including schemes for resettlement, grant of house-sites, formation of labour cooperatives, etc. In September 1957, the National Development Council proposed that from lands obtained through the application of agricultural ceilings and those donated in Bhoodan and Gramdan, a programme for resettling 300,000 families of landless workers should be undertaken. Legislation regarding ceilings was still in its early stages, and the scheme could not be implemented in the form proposed. However, individual States continued with the resettlement schemes

which they had formulated, and a number of these were assisted by the Central Government. In some States, notably Punjab, Bombay, Andhra Pradesh and Bihar, labour cooperatives were promoted.

6. About 10,000 families were settled in Bihar on Bhoodan lands under two schemes for which the Central Government provided assistance. Assistance was also provided for developing a number of Gramdan villages in Orissa. Of the total area of 4.4 million acres donated as Bhoodan, about 900,000 acres have been distributed so far. Difficulties regarding the title to the lands donated and other procedural and organisational matters account for the slow progress.

7. During the Second Plan, a number of State Governments took steps to provide house-sites free or on a subsidised basis to landless agricultural labourers and protected them from forced ejectment. In Andhra Pradesh, house-sites are granted to bona fide applicants, preference being given to those who own no sites. In Madhya Pradesh, land for house-sites is set aside generally in the village abadi and, if there is some Government land, it is allotted free of any premium and assessment. In Madras, Government wastelands in the villages are assigned to persons without houses. Where Government lands are not available for assignment as house-sites to 'Harijans' and others, the sites on which they are actually living or some other suitable sites are acquired and assigned free of cost to those who do not own a house or a house-site. The Government of Maharashtra have directed that ordinarily the provision of house-sites should take precedence over other uses of land situated close to the village. It is further provided that house-sites required by agricultural families should be granted by the Collector to agriculturists upto two gunthas in area and up to the value of Rs. 200. In Mysore, if no Government land is available for the grant of house-sites, private land is acquired on payment of compensation and allotted to the agriculturists for house-sites. In the Punjab, schemes have been formulated under which subsidies are given to landless persons for purchase of land and for securing suitable house-sites.

#### PROGRAMMES IN THE THIRD PLAN

8. It is apparent from the experience of the first two Plans that while special schemes in the interest of agricultural labourers are useful, they can touch only the fringe of the problem. Ultimately, it is by achieving rapid and intensive development in the rural areas as part of the process of economic development for the country as a whole that the landless sections of the population can be substantially benefited. The Third Plan provides for large investments in the development of the rural economy. The total outlays in the public sector on agriculture, community development and irrigation will amount to over Rs. 1700 crores.

Agricultural production is expected to increase by about 30 per cent. About 20 million acres of land will be benefited by irrigation and 11 million acres of agricultural land will come under soil conservation.

9. In the village and small industries programme, there is a total provision of Rs. 92 crores for khadi, ambar khadi and village industries and Small scale industries and industrial estates will be extended to rural areas. All towns and villages with population exceeding 5000 and nearly 50 per cent of villages with a population range of 2000 to 5000 are expected to be electrified. If effective use is made of these facilities considerable additional employment will be created. The village and small industry programme as a whole is estimated to provide part-time employment or fuller employment for 8 million persons and whole-time employment for about 900,000 persons. Given full implementation of the Plan, these figures are by no means the limit of what can be achieved.

10. Through the extension of educational facilities to the entire age group 6-11 years and the development of other social services, some of the handicaps of the weaker sections will diminish. A village water supply programme at a total cost of Rs. 35 crores is being taken up with the object of providing good drinking water in all villages by the end of the Third Plan. The Plan includes programmes estimated to cost Rs. 114 crores for the welfare of backward classes. A considerable part of this amount will benefit agricultural workers. In the community development programme, the emphasis must always be on undertaking development which will benefit the weaker sections. Under the village housing project scheme, Rs. 5 crores have been allotted for the acquisition of land in villages for allotment as house-sites to agricultural labourers. Thus, to a very large extent it is through the effective implementation of these various programmes and ensuring that their benefits reach the agricultural labourers and the backward sections generally that the conditions will improve. In a word, the Plan itself, implemented efficiently and with close attention to its basic social and economic aims, is the largest part of the answer to the problem of agricultural labourers and the weaker sections of the rural community.

11. The plans of States provide for about Rs. 4 crores for resettlement schemes. It may be expected that when surplus lands become available as a result of the imposition of ceilings, such additional resources as are required for their settlement by landless persons and others will be made available by the States through the annual plans. In addition, at the Centre a sum of Rs. 8 crores has been allocated for resettlement schemes for landless labourers. A committee set up by the Government of India has recently surveyed lands classified as "other uncultivated lands excluding fallow lands" and "fallow lands other

than current fallows", and has identified nearly a million acres of land in blocks of over 250 acres. When blocks of less than 250 acres are surveyed by district authorities, further areas should become available. These, together with the land to be reclaimed under agricultural programmes are expected to amount to about 4 million acres. The Central Advisory Committee on Agricultural Labour recently set up by the Planning Commission visualises that efforts will be made to settle about 700,000 families of landless labourers in the course of the Third Plan over an area of 5 million acres. This goal should be kept in view and lands suitable for resettlement identified to make such a programme feasible. In this connection, it will be necessary to extend surveys of lands fit for settlement to the block and village level. Wherever there is opportunity for settlement, this should be utilised, even though only a small number of families may be benefited in each case. Where land is allotted, steps should be taken to provide credit and other assistance, so that the persons settled are able to rehabilitate themselves effectively.

12. In some ways the most significant development proposed in the Third Plan, whose benefits will go largely to agricultural labour, is the programme for undertaking works projects in rural areas which has been described earlier in the Chapter on "Employment and Manpower". Under this programme, it is hoped to provide additional wage-employment in rural areas for about 100 days in the year, specially during the slack agricultural seasons, for about 2.5 million persons by the last year of the Plan. The programme will specially concentrate on schemes for agricultural development like irrigation, flood control, land reclamation, afforestation and soil conservation, road development projects, provision of rural amenities and village housing projects. In the rural works programme, labour cooperatives and other construction organisations will have a large role. They will be expected to carry stocks of tools, obtain contracts, organise the necessary cadres and work closely with panchayat samitis and panchayats. A permanent solution to the problem of under-employment can be achieved only when scientific agriculture comes to be universally adopted and the rural economic structure is greatly strengthened and diversified. Efforts in these directions will also be intensified during the Third Plan. Meanwhile, the large-scale programme of rural works will provide considerable relief and will help to accelerate the pace of development in rural areas.

13. In a real sense, the problems of agricultural labour are to be traced to the long period of stagnation in the rural economy and the persistence of a rigid social structure largely based on caste. These basic deficiencies are being gradually removed, and the processes of social and technological change have to be hastened. Successive Five Year Plans seek to harness the natural resources of the country, increase production

and employment, and provide greater amenities to rural areas. Reorganisation of the rural economy along cooperative lines and emphasis on the role and obligations of the community are intended not merely to raise agricultural productivity and diversify the rural economic structure but, equally, to bring about as rapidly as may be possible an integrated society in which there will be equal opportunity for every member of the community irrespective of caste or status. In other words, in the structure of the rural economy which the Five Year Plans attempt to build up, agricultural labourers will participate fully and on equal terms with others, and will achieve effective economic and social equality with the rest of the rural population. A close watch on the progress actually achieved in these directions should be maintained through special studies and evaluation and review by the Central Advisory Committee on Agricultural Labour and similar bodies proposed to be set up in the States.

## CHAPTER XXIV

### IRRIGATION AND POWER

IRRIGATION and power have been among the most significant fields of development since the beginning of the First Plan. Expansion of irrigation, from large as well as small projects, is an essential condition for diversifying agriculture and increasing crop yields. The development of power is a pre-requisite for carrying out large industrial programmes. River valley projects like Bhakra-Nangal, Hirakud, Chambal, Tungabhadra, Nagarjunasagar and the D.V.C., which provide both irrigation and power, have, along with other programmes of development, a leading role in establishing higher levels of well-being in the regions served by them. Thus, large-scale development of irrigation and power, helps to re-build the agricultural economy and to pave the way for the rapid industrialisation of the country.

### IRRIGATION

2. The available river water resources of the country were computed in 1950 at about 1356 million acre feet, of which it is estimated that because of physiographical conditions, only about 450 million acre feet can be used for irrigation. Up to 1951, about 76 million acre feet, *i.e.* about 17 per cent of the usable flow or 5.6 per cent of the total annual flow, had been utilised. By the end of the Second Plan, it is estimated that about 120 million acre feet representing about 27 per cent of the usable flow or 8.9 per cent of the total annual flow will be utilised. An additional 40 million acre feet are likely to be used in the Third Plan, bringing the proportion to about 36 per cent of the usable flow.

3. Substantial supplies are available from ground water sources. No inventory of these resources has been prepared so far, but a Ground Water Exploration Project was started in 1953 to carry out exploratory drillings in areas which held out promise of ground water availability, namely, inland river basins, coastal fringes, etc. Generally speaking, the Indo-Gangetic basin, the Sabarmati basin and coastal areas in Madras and Andhra Pradesh offer favourable scope for ground water development. Ground water can be utilised for irrigating areas which cannot be economically irrigated by canals, or which are susceptible to water-logging.

## 4. Land utilisation at the end of the First Plan was as follows:

	million acres
gross area . . . . .	806
culturable area . . . . .	476
net area sown . . . . .	318
area sown more than once . . . . .	45
total cropped area . . . . .	363
net area irrigated* :	
government canals . . . . .	19.8
private canals . . . . .	3.4
tanks . . . . .	10.9
tubewells and other wells . . . . .	16.7
other sources . . . . .	5.4
total	56.2 say
area irrigated more than once . . . . .	7
gross area irrigated** . . . . .	63

5. At the beginning of the First Plan, the area irrigated from all sources was 51.5 million acres, of which 22 million acres were irrigated from large and medium projects. It has been estimated that by the end of the Fifth Plan (1975-76), it might be possible to bring about 85 million acres (gross) under irrigation from large and medium projects including multi-purpose projects. In formulating proposals for the Third Plan, this long-range goal has been kept in view. The overall ultimate irrigation potentialities from major and medium irrigation projects are expected to be about 100 million acres (gross) and from minor irrigation including small tanks, tubewells, open wells, etc., about 75 million acres (gross). Major and medium schemes benefit large and extensive areas, give more assured protection in years of scarcity and also can often be designed to serve a multiplicity of purposes. Minor schemes require comparatively small outlays, yield quick results and can be executed speedily with local resources. But the protection afforded by them is liable to be substantially cut short in drought years when protection is needed most. In particular, tanks fail to store water when there is failure of rainfall in the locality. Balanced development of major and medium irrigation schemes and minor irrigation schemes is essential as they form part of a composite irrigation programme. Each area has to be served by the kind of schemes for which it is best suited, and which will give the best results at minimum cost.

\*Net irrigated area is the area irrigated in a year counting the area which receives irrigation for more than one crop, once only.

\*\*Gross irrigated area represents the total of cropped areas irrigated in a year, i.e. net irrigated area added to the area under subsequent crops irrigated during the year.

@Irrigation projects costing more than Rs. 5 crores each are classed as major schemes and those costing between Rs. 5 crores and Rs. 10 lakhs as medium schemes. Schemes costing Rs. 10 lakhs or less are classed as minor schemes, provided they do not form part of any existing major or medium scheme.



6. *Development of irrigation.*—The progress of irrigation up to the end of the First and Second Plans and the targets for the Third Plan are shown in the Table below:

Table 1: Area irrigated

	(net area in million acres)			
	1950-51	1955-56	1960-61	1965-66
major and medium irrigation . . . . .	22.0	24.9	31.0	42.5
minor irrigation . . . . .	29.5	31.3	39.0	47.5
total . . . . .	51.5	56.2	70.0	90.0

## FIRST AND SECOND PLAN SCHEMES

7. The aggregate estimated cost of major and medium irrigation schemes included in the First and Second Plans is of the order of Rs. 1,400 crores, and on full development, they are expected to irrigate about 38 million acres. By the end of the First Plan, an outlay of Rs. 380 crores had been incurred on these schemes. The outlay on them in the Second Plan is estimated at Rs. 370 crores. In the Third Plan, these schemes will require a total outlay of about Rs. 436 crores, leaving a balance of about Rs. 214 crores for the Fourth Plan. Some of the projects, such as the Rajasthan Canal, Gandak, Ukai, Narmada, Nagarjunasagar, etc., will continue beyond the Third Plan.

8. Irrigation benefits accruing from the First and Second Plan schemes, at the end of the First Plan, and during the Second Plan are given in the Table below:

Table 2: Benefits from irrigation schemes

end of the year	potential* at channel outlets (in million acres)	gross area irrigated (in million acres)	as percentage of potential at outlet	net area irrigated (in million acres)
1955-56 . . . . .	6.5	3.1	48	2.9
1956-57 . . . . .	7.4	4.2	58	3.4
1957-58 . . . . .	8.2	5.8	71	4.9
1958-59 . . . . .	9.7	6.5	67	5.9
1959-60 . . . . .	11.5	8.3	72	7.4
1960-61 (estimated) . . . . .	13.2	10.0	76	9.0

The distribution, by States, of the ultimate benefits from major and medium irrigation schemes of the First and Second Plans, the potential expected to be created by the end of Second Plan and the corresponding utilisation is shown in Annexure I.

\*Irrigation potential is the area which can be irrigated with the water made available at channel outlets.

9. In the Second Plan, it was proposed to bring under irrigation an additional area of 12 million acres from major and medium projects. When the Plan was reviewed in 1958, this was reduced to 10.4 million acres. The additional utilisation, as now estimated by States, is expected to be 6.9 million acres (gross). As against the outlay originally envisaged for the Second Plan, the actual outlay is about Rs. 370 crores. In several States, the programmes lagged behind on account of inadequacy of technical personnel. In some cases, progress was retarded owing to short supplies of essential materials, such as steel, cement, coal, etc. Also, in the past, under pressure of local or regional demands, some projects have been commenced despite incomplete investigations and inadequate surveys, and this has resulted in these projects lingering on with consequent delay in accrual of benefits from them. Increases in wages and costs of materials have also led to a reduction in the physical achievement anticipated from the outlay. There has been an improvement in the pace of utilisation in the Second Plan as will be seen from Table 2. Larger results, however, could have been achieved if greater attention had been given to the timely excavation of field channels\* and demonstration to the cultivators, in advance, of improved techniques of agriculture and the most suitable cropping pattern to be adopted on irrigation facilities becoming available. In the course of the preparation of the Third Plan, considerable emphasis has been placed on the strengthening of technical organisations and on taking such other steps as would ensure that progress during the Plan period is not hampered.

#### PROGRAMME FOR THE THIRD PLAN

10. It is essential to secure maximum benefits in the shortest time from the large investments that are being made on irrigation projects. It is also important to ensure that the benefits which accrue from these projects are not diminished through deterioration of land due to waterlogging and inadequate drainage or other causes. Emphasis has, therefore, been given in the Third Plan to the following categories of schemes :

- (1) completion of continuing schemes of the Second Plan right up to the cultivators' fields, i.e., including field channels;
- (2) drainage and anti-waterlogging schemes; and
- (3) medium irrigation projects.

11. The total irrigation potential remaining to be utilised at the end of the Second Plan is 3.2 million acres. During the Third Plan, additional irrigation potential of about 13.8 million acres is expected to be created from continuing schemes and 2.4 million acres from new schemes of the Third Plan. The total utilisation in the Third Plan period is

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\*The term "field channel" refers to a channel which conveys or distributes water from an outlet or opening in a water course for irrigation of fields.

expected to be 12.8 million acres (gross). The State-wise distribution of irrigation potential and utilisation is shown in Annexure I. In making this assessment, the States have generally assumed full utilisation within a period of five years in the case of major projects, and within two to three years in the case of medium projects, from the time water becomes available at outlets of channels. It should be possible in several projects, through closer coordination of efforts in connected fields to do better.

12. The cost of the irrigation and flood control programme during the Third Plan is Rs. 661 crores. This includes Rs. 436 crores for irrigation projects carried over from the Second Plan, Rs. 164 crores for new projects and Rs. 61 crores for flood control, drainage, anti-waterlogging and anti-sea-erosion schemes. The State-wise distribution is given in Annexures II and III. The new projects to be commenced during the Third Plan include:

- (1) about 95 new medium irrigation schemes which will be of value both for agricultural and for regional development;
- (2) storage schemes on the Beas in the Punjab undertaken as a result of the conclusion of The Indus Water Treaty 1960; and
- (3) schemes representing the irrigation component of multi-purpose projects taken up primarily for power development, and those necessitated by irrigation programmes undertaken in neighbouring States, for instance, work on the Gandak Project in Uttar Pradesh.

13. The position in regard to phasing of expenditure on First, Second and Third Plan irrigation schemes is set out in the following Table:

Table 3: Phasing of expenditure

	(Rs. crores)					
	total cost	outlay before First Plan	outlay in First Plan	outlay in Second Plan	outlay for Third Plan	outlay required in Fourth Plan
First Plan schemes . . .	790	80	300	270	135	5
Second Plan schemes (new) . .	610	..	..	100	301	209
Third Plan schemes (new) . .	364	..	..	..	164	200
total . . .	1764	80	300	370	600	414

14. *Flood-control, drainage, anti-waterlogging and anti-sea-erosion schemes.*—Flood control, drainage and anti-waterlogging are closely related to irrigation, and have to be viewed together in drawing up comprehensive development plans. At the time of the preparation of

the Second Plan, sufficient data had not been collected for preparing detailed proposals for flood control for inclusion in the Plans of States. The flood control programme was, in fact, taken up on an emergency basis, and was, therefore, treated as a Centrally sponsored programme. The flood control programme is now well under way and considerable progress has been made in surveys and investigations. In the Third Plan, therefore, flood control schemes, together with drainage, anti-waterlogging and anti-sea-erosion schemes form part of the Plans of States.

15. The importance of providing adequate drainage in irrigated areas to prevent their deterioration by rising ground water table and consequent waterlogged conditions has already been emphasised earlier. The cost of drainage works in irrigated areas in the case of continuing and new schemes has to be included in the project costs of these irrigation schemes. Waterlogging in certain parts of the country, particularly in the Punjab, has become serious, and anti-waterlogging measures such as drains, lining of irrigation channels in selected reaches, and other steps to depress the ground water table, have to be taken up in the Third Plan on an extensive scale. Similarly, anti-sea-erosion measures in certain coastal reaches, such as Kerala have to be given due attention. An outlay of Rs. 60 crores was provided in the Second Plan for flood control schemes. The actual expenditure is about Rs. 48 crores. In the Third Plan, flood control, drainage, anti-waterlogging and anti-sea-erosion schemes involving an outlay of Rs. 61 crores have been provided for in the Plans of States.

16. The programme for Irrigation in the Third Plan, which includes flood control, drainage, anti-waterlogging and anti-sea-erosion, entails a total estimated outlay of Rs. 661 crores. The distribution of this amount and the corresponding benefits under different heads are as follows:

Table 4: Programme and benefits in the Third Plan

group	estimated outlay (Rs. crores)	additional benefits	
		potential (in million acres)	gross irriga- ted area
irrigation			
continuing schemes . . . .	436	13.8	11.65
new schemes . . . . .	164	2.4	1.15
total . . . . .	600	16.2	12.80
		net area	11.50
flood control, drainage, anti-waterlogging and anti-sea-erosion schemes . . . .	61	about 5 million acres to be benefited and 25 miles of sea coast to be protected.	
total irrigation and flood control . . . .	661		

The requirement of foreign exchange for irrigation projects in the Third Plan has been estimated at Rs. 50 crores. The particulars of important irrigation projects continuing from the First and Second Plans and those included in the Third Plan are given in Annexures IV and V.

17. *Soil conservation in river valley catchments.*—Large sums of money are being invested in creating storage reservoirs for irrigation and power generation. It is important that the life of these reservoirs is not unduly shortened by excessive flows of silt and sediment from the catchment areas. Also, soil cover in the catchment area has to be conserved. These considerations make it imperative that adequate soil conservation measures comprising afforestation, contour bunding, terracing, gully plugging, construction of check dams, regulation of grazing, prevention of shifting cultivation, etc., should be undertaken in these catchments. Taking only the larger river valley projects, viz. Bhakra-Nangal, D.V.C., Hirakud, Chambal and Machkund, the total catchment area for these is about 37 million acres, of which more than 15 million acres require soil conservation measures. The programme has also to be extended to other river valleys. In the projects mentioned above, an area of about 1.4 lakh acres has been covered by soil conservation programme undertaken up to the end of the Second Plan at a cost of about Rs. 1 crore. In the Third Plan, an outlay of Rs. 11 crores has been provided under "Agriculture" for soil conservation works in river valley areas and about a million acres of catchment area are expected to be covered. The programme of soil conservation is necessarily of a long-term character to be completed over four or five Plan periods. Administrative responsibility for this programme at the Centre rests with the Ministry of Food and Agriculture and the Central Water and Power Commission have set up a special unit for examining and advising on soil conservation schemes for river valley catchments received from the State Governments. The establishment of River Boards, to which reference is made later, will facilitate speedy implementation of the soil conservation programme. It will be one of their main functions to coordinate programmes of afforestation and control of soil erosion in inter-State river valleys.

18. *Phasing of projects.*—It is of utmost importance that projects should be correctly phased. This will lead to economy in construction costs and will also make it possible to secure the maximum use of irrigation facilities created, even before the actual completion of each project. It will also prevent unnecessary locking up of capital on items of work in advance of actual need. There are four aspects connected with planning for irrigation works which are interlinked and these should be appropriately coordinated from the time a project is first approved. These are :

- (1) construction of the dam or barrage for storing or diverting water;
- (2) construction of the canal and distributary system ending with definite and convenient points of offtake for individual villages;

- (3) completion by beneficiaries, according to a time schedule coordinated with (2) above, of field channels in every village so as to irrigate the entire area to be served by the project as water becomes available in the canals; and
- (4) adoption of improved agricultural practices and new crop patterns, so that the maximum agricultural output is secured from efficient use of irrigation facilities.

Careful coordination in planning and execution between these different stages will ensure that phase by phase under each project effective results are obtained.

#### FINANCIAL RETURNS

19. Irrigation works constructed in recent years and those under construction at present, are much more expensive than works built in the past, partly on account of higher costs of labour and materials and partly on account of the more difficult and, therefore, more expensive means of making supplies available, viz., high dams, etc. For this reason, and also on account of the increased cost of maintenance and operation of old and new projects, adequate returns are not being secured. In consequence, irrigation systems are at present working at a loss in almost all States. The Second Finance Commission drew attention to the deterioration which had occurred in the net receipts from irrigation projects. The position has even worsened in recent years. Special steps to bring about substantial improvements in financial returns are, therefore, urgently called for along the following lines:

- (1) speeding up utilisation of irrigation facilities created by irrigation projects;
- (2) revision of water rates and introduction of compulsory water cess;
- (3) recovery of betterment levy; and
- (4) economy in the use of irrigation supplies.

20. Utilisation of irrigation involves efforts by a number of departments, each of which has a distinct contribution to make, e.g. Irrigation, Revenue, Agriculture, Community Development, Cooperation, etc. Besides proper phasing of the construction programme of each project, including construction of field channels, a large number of other developmental activities have to be carried out simultaneously for speeding up utilisation. These aspects are considered further later in the chapter.